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NEC

MODEL **MT840** **MT1040** **MT1045**
MT840G **MT1040G** **MT1045G**
MT840J **MT1040J** **MT1045J**
(Japanese model) (Japanese model) (Japanese model)

LCD Projector

SERVICE MANUAL

PART No.399911018

Better Service

Better Reputation

Better Profit

SAFETY CAUTION:
Before servicing this chassis, it is important that the service technician read and follow the “Safety Precautions” and “Product Safety Notice” in this Service Manual.

WARNING:
SHOCK HAZARD - Use an isolation transformer when servicing.

NEC Corporation
TOKYO, JAPAN

CONTENTS

SAFETY PRECAUTIONS 2-1

USERS MANUAL 3-1

TROUBLE SHOOTING 4-1

METHOD OF ADJUSTMENTS 5-1

CIRCUIT DESCRIPTION 6-1

METHOD OF DISASSEMBLY 7-1

DISASSEMBLY 8-1

METHOD OF WIRING 9-1

REPLACEMENT PART LIST 10-1

CONNECTION DIAGRAMS 11-1

BLOCK DIAGRAM 12-1

SCHEMATIC DIAGRAMS 13-1

SAFETY PRECAUTIONS

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included.
Therefore, it should be read carefully in order to avoid any problems.

ATTENTION

RISQUE D'ELECTROCUTION
NE PAS OUVRIR

MISE EN GARDE: AFIN DE REDUIRE LES RISQUES D' ELECTROCUTION, NE PAS DEPOSER LE COUVERCLE, IL N'Y A AUCUNE PIECE UTILISABLE A L'INTERIEUR DE CET APPAREIL. NE CONFIER LES TRAVAUX D'ENTRETIEN QU'A UN PERSONNEL QUALIFIE.

Ce symbole a pour but de prévenir l' utilisateur de la présence d' une tension dangereuse, non isolée se trouvant à l' intérieur de l' appareil. Elle est d' une intensité suffisante pour constituer un risque d' électrocution. Eviter le contact avec les pièces à l' intérieur de cet appareil.

Ce symbole a pour but de prévenir l' utilisateur de la présence d' importantes instructions concernant l' entretien et le fonctionnement de cet appareil. Par conséquent, elles doivent être lues attentivement afin d' éviter des problèmes.

SAFTY PRECAUTIONS

During servicing carefully observe the following.

1. OBSERVE ALL PRECAUTIONS
Items and locations that require special care during servicing, such as the cabinet, chassis, and parts are labelled with individual safety instructions. Carefully comply with these instructions and all precautions in the instruction manual.

2. BE CAREFUL OF ELECTRIC SHOCK
The chassis carries an AC voltage. If you touch the chassis while it is still alive, you will get a severe shock. If you think the chassis is alive, use an isolating transformer or gloves, or pull out the plug before replacing any parts.

3. USE SPECIFIED PARTS
The components have been chosen for minimum flammability and for specific levels of resistance value and withstand voltage. Replacement parts must match these original specifications. Parts whose specifications are particularly vital to safe use and maintenance of the set are marked ⚠on the circuit diagrams and parts list. Substitution of these parts can be dangerous for you and the customer, so use only specified parts.

4. REMOUNT ALL PARTS AND RECONNECT ALL WIRES AS ORIGINALLY INSTALLED
For safety, insulating tape and tubes are used throughout, but some lift-off parts on the printed wiring board require special attention.
All wires are positioned away from high-temperature and high-voltage parts, and, if removed for servicing, they must be retuned precisely to their original positions.

5. LAMP
Be very careful of the lamp because it generates high heat while it is used at high voltage. When replacing the bulb, make sure it is cool enough.

6. LENS
Do not look into the lens during projection. This important to avoid damage to the eyes.

7. SERVICING
At the time of repair or inspection services, use an earth band (wrist band), without fail.

8. RUN A COMPLETE SAFETY CHECK AT THE COMPLETION OF SERVICING
After completion of servicing, confirm that all screws, parts, and wiring, removed or disconnected for servicing, have been returned to their original positions. Also examine if the serviced sections and peripheral areas have suffered from any deterioration as a result of servicing. In addition, check insulation between external metallic parts and blades of wall-outlet plugs. This examination is indispensable in confirming complete establishment of safety.

(Insulation check)
Pull out a plug from a wall outlet to disconnect the connection cable. Then turn on the POWER switch. Use a 500V megger (Note 2) and confirm that the insulation resistance is 1MΩ or more between each terminal of the plug and exposed external metal (Note 1). If the measured value is below the specified level, then it is necessary to inspect and fix the set.

(Note 1)
Exposed external metal....RGB input terminals, control terminals, etc.
(Note 2)
If a 500V megger is not available for an unavoidable reason, then use a circuit tester or the like for inspection.

IMPORTANT INFORMATION

Precautions

Please read this manual carefully before using your NEC MultiSync MT840/MT1040/MT1045 Projector and keep the manual handy for future reference.
Your serial number is located under the name plate label on the left side of your MultiSync MT840/MT1040/MT1045. Record it here:

CAUTION

To turn off main power, be sure to remove the plug from power outlet.
The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

CAUTION

TO PREVENT SHOCK, DO NOT OPEN THE CABINET.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED NEC SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may be sufficient to cause electrical shock. Therefore, it is dangerous to make any kind of contact with any part inside of the unit.

This symbol alerts the user that important information concerning the operation and maintenance of this unit has been provided. The information should be read carefully to avoid problems.

WARNING
TO PREVENT FIRE OR SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
DO NOT USE THIS UNIT'S GROUNDED PLUG WITH AN EXTENSION CORD OR IN AN OUTLET UNLESS ALL THREE PRONGS CAN BE FULLY INSERTED.
DO NOT OPEN THE CABINET. THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE. ALL SERVICING MUST BE DONE BY QUALIFIED NEC SERVICE PERSONNEL.

DOC Compliance Notice

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

3. GSGV Acoustic Noise Information Ordinance:

The sound pressure level is less than 70 dB (A) according to ISO 3744 or ISO 7779.

RF Interference

WARNING
The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT those specified by NEC Technologies in this manual. Failure to comply with this government regulation could void your right to operate this equipment.
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

In UK, a BS approval power cable with moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cable is not supplied with this equipment please contact your supplier.

Important Safeguards

These safety instructions are to ensure the long life of your projector and to prevent fire and shock. Please read them carefully and heed all warnings.

Installation

1. For best results, use your projector in a darkened room.
2. Place the projector on a flat, level surface in a dry area away from dust and moisture.
3. Do not place your projector in direct sunlight, near heaters or heat radiating appliances.
4. Exposure to direct sunlight, smoke or steam can harm internal components.
5. Handle your projector carefully. Dropping or jarring can damage internal components.
6. Do not place heavy objects on top of the projector.
7. If you wish to have the projector installed on the ceiling:
   a. **Do not attempt to install the projector yourself.**
   b. The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury.
   c. In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes.
   d. Please consult your dealer for more information.

Power Supply

1. The projector is designed to operate on a power supply of 100-120 or 200-240 V 50/60 Hz AC. Ensure that your power supply fits this requirement before attempting to use your projector.
2. Handle the power cable carefully and avoid excessive bending. A damaged cord can cause electric shock or fire.
3. If the projector is not to be used for an extended period of time, disconnect the plug from the power outlet.

Cleaning

1. Unplug the projector before cleaning.
2. Clean the cabinet periodically with a damp cloth. If heavily soiled, use a mild detergent. Never use strong detergents or solvents such as alcohol or thinner.
3. Use a blower or lens paper to clean the lens, and be careful not to scratch or mar the lens.

Lamp Replacement

- To replace the lamp, follow all instructions provided on page E-33.
- Be sure to replace the lamp when the Status light comes on. If you continue to use the lamp after 2000 hours (1500 hours : MT1045) of use, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.
- Allow a minimum of ONE minute to elapse after turning off the projector. Then disconnect the power cable and allow 60 minutes to cool the projector before replacing the lamp.

Fire and Shock Precautions

1. Ensure that there is sufficient ventilation and that vents are unobstructed to prevent the build-up of heat inside your projector. Allow at least 3 inches (10cm) of space between your projector and a wall.
2. Prevent foreign objects such as paper clips and bits of paper from falling into your projector. Do not attempt to retrieve any objects that might fall into your projector. Do not insert any metal objects such as a wire or screwdriver into your projector. If something should fall into your projector, disconnect it immediately and have the object removed by a qualified NEC service personnel.
3. Do not place any liquids on top of your projector.

- Do not look into the lens while the projector is on. Serious damage to your eyes could result.
- Keep any items such as magnifying glass out of the light path of the projector. The light being projected from the lens is extensive, therefore any kind of abnormal objects that can redirect light coming out of the lens, can cause unpredictable outcome such as fire or injury to the eyes.
- Do not cover the lens with the supplied lens cap or equivalent while the projector is on. Doing so can lead to melting of the cap and possibly burning your hands due to the heat emitted from the light output.
- Do not look into the laser pointer while it is on and do not point the laser beam at another person. Serious injury could result.

TABLE OF CONTENTS

1. INTRODUCTION

Introduction to the MultiSync MT840/MT1040/MT1045 Projector ... E-6
Getting Started ... E-6
Getting to Know Your MultiSync MT840/MT1040/MT1045 Projector ... E-7
- Front Features ... E-7
- Rear Features ... E-7
- Top Features ... E-8
- Terminal Panel Features ... E-9
- Remote Control Features ... E-10

2. INSTALLATION

Setting Up Your Projector ... E-12
Selecting a Location ... E-12
Using a Tabletop or Cart ... E-12
Distance Chart ... E-13
Ceiling Installation ... E-14
Reflecting the Image ... E-14
Wiring Diagram ... E-15

3. OPERATION

General Controls ... E-17
Using the Menus ... E-17
Using a USB Mouse ... E-17
Menu Tree ... E-18
Menu Elements ... E-19
Menu Descriptions & Functions ... E-20
Source Select ... E-20
- RGB1/2 ... E-20
- Video/S-Video ... E-20
- PC Card Viewer ... E-20

Adjustments ... E-20
- Picture ... E-20
- Volume ... E-20
- Image ... E-20
  - Auto Adjust ... E-21
  - Position ... E-21
  - Pixel Adjust ... E-21
  - Resolution ... E-21
- Color Temperature ... E-21
- Keystone ... E-21
- Factory Default ... E-21

Image Options ... E-21
- Image Mode ... E-21
  - Aspect Ratio ... E-21
- Video Mode ... E-22
  - Gamma ... E-22
  - Noise Reduction ... E-22
  - Color Matrix ... E-22

Projector Options ... E-22
- Menu ... E-22
  - Language ... E-22
  - Projector Pointer ... E-22
  - Source Display ... E-22
- Setup ... E-23
  - Orientation ... E-23
  - Background ... E-23
  - Signal Select ... E-23
  - Auto Start ... E-23
  - Power Panagement ... E-23
  - Power Off Confirmation ... E-23
  - Mouse Settings ... E-23
  - Keystone Save ... E-23
  - Fan High Speed Mode ... E-23
  - Clear Lamp Hour Meter ... E-23
  - Remote Sensor ... E-24
  - S-Video Mode Select ... E-24
  - PC Card Viewer Options ... E-24
  - Capture Options ... E-24

Tools ... E-24
- Capture ... E-24
- PC Card Files ... E-25
- ChalkBoard ... E-25

Help ... E-25
- Contents ... E-25
- Source Information ... E-25
- Projector Information ... E-25

Using the PC Card Viewer Fucntion ... E-26
- Features ... E-26
- Inserting and Ejecting a PC Card ... E-26
- Installing the PC Card Viewer Software ... E-27
- Starting Up the PC Card Viewer Software on your PC (PC Card Viewer Utility 1.0) ... E-27
- Operating the PC Card Viewer Function from the Projector (playback) ... E-28
- Capturing Images Displayed on the Projector ... E-30
- Viewing Digital Images ... E-31
- Uninstalling the PC Card Viewer Software ... E-31
- Terminology ... E-32

4. MAINTENANCE

Replacing the Lamp ... E-33
Remote Control Battery Installation ... E-34
Cleaning or Replacing the Filters ... E-34

5. TROUBLESHOOTING

Status Light Messages ... E-35
Common Problems & Solutions ... E-35

6. SPECIFICATIONS

Optical/Electrical/Mechanical ... E-37
Cabinet Dimensions ... E-38
D-Sub Pin Assignments ... E-40
Timing Chart ... E-41
PC Control Codes ... E-42
Cable Connection ... E-42

1. INTRODUCTION

Introduction to the MultiSync MT840/MT1040/MT1045 Projector

This section introduces you to your new MultiSync MT840 (SVGA)/ MT1040 and MT1045 (XGA) Projector describes the features and controls.

Congratulations on Your Purchase of The MultiSync MT840/ MT1040/MT1045 Projector

The MultiSync MT840/MT1040/MT1045 is one of the very best projectors available today. The MultiSync MT840/MT1040/MT1045 enables you to project precise images up to 300 inches across (measured diagonally) from your PC or Macintosh computer (desktop or notebook), VCR, DVD player, document camera, or even a laser disc player.

You can use the projector on a tabletop or cart, you can use the projector to project images from behind the screen, and the projector can be permanently mounted on a ceiling*1. The remote control can be used wirelessly.

Features you'll enjoy:

- Simple set up and operation.
- Hot air blown from the vents does not bother the audience during your presentation since the vents are located on the front.
- A high-performance 180 watt NSH (200W NSH : MT1045) lamp.
- The supplied wireless remote control that operates the projector from any angle.
- The manual zoom control enables you to adjust the image to be between 30 (0.76m) and 300 inches (7.6m) (measured diagonally).
- Keystone correction allows you to correct trapezoidal distortion so that the image is square.
- You can choose between video modes depending on your source: "normal" for a typical picture, "natural" for true color reproduction.
- The built-in PC Card Viewer allows you to start your presentation even when a PC is not available at the site.
- The "Capture" enables you to use the entire picture as a background image or to create slides.
- An image can be projected from in front or behind a screen, and the projector can even be installed on the ceiling.
- NEC Technologies' exclusive Advanced AccuBlend intelligent pixel blending technology - an extremely accurate image compression technology - offers a crisp image with SXGA (1280 x 1024) resolution*3 . You can select any point on the screen with the pointer and enlarge the selected area.
- Supports most IBM VGA, SVGA, XGA*2 , SXGA(with Advanced AccuBlend)*3, Macintosh, component signal (YCbCr / YPbPr) or any other RGB signals within a horizontal frequency range of 15 to 85 kHz and a vertical frequency range of 50 to 85 Hz. This includes NTSC, PAL, PAL60, SECAM and NTSC4.43 standard video signals.

NOTE: Composite video standards are as follows:
NTSC: U.S. TV standard for video in U.S. and Canada.
PAL: TV standard used in Western Europe.
PAL60: TV standard used for NTSC playback on PAL TVs.
SECAM: TV standard used in France and Eastern Europe.
NTSC4.43: TV standard used in Middle East countries.

- The supplied remote control can be used without a cable, and you can even use the remote control and mouse adapter to operate your PC or Macintosh mouse wirelessly from across the room with the built-in remote mouse receiver.
- You can control the projector with a PC using the PC Control port.
- The contemporary cabinet design is light, compact, easy to carry, and complements any office, boardroom or auditorium.
- Eight kinds of pointers are available for your presentation.
- USB terminal allows USB mouse operation*4.

*1 **Do not attempt to mount the projector on a ceiling yourself.** The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury. In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes. Please consult your dealer for more information.

*2 An XGA image (1024 × 768) is converted into an 800 × 600 crisp image with NEC technology's Advanced AccuBlend on MT840.

*3 An SXGA image (1280 × 1024) is converted into a 1024 × 768 crisp image with NEC technology's Advanced AccuBlend on MT1040/MT1045.

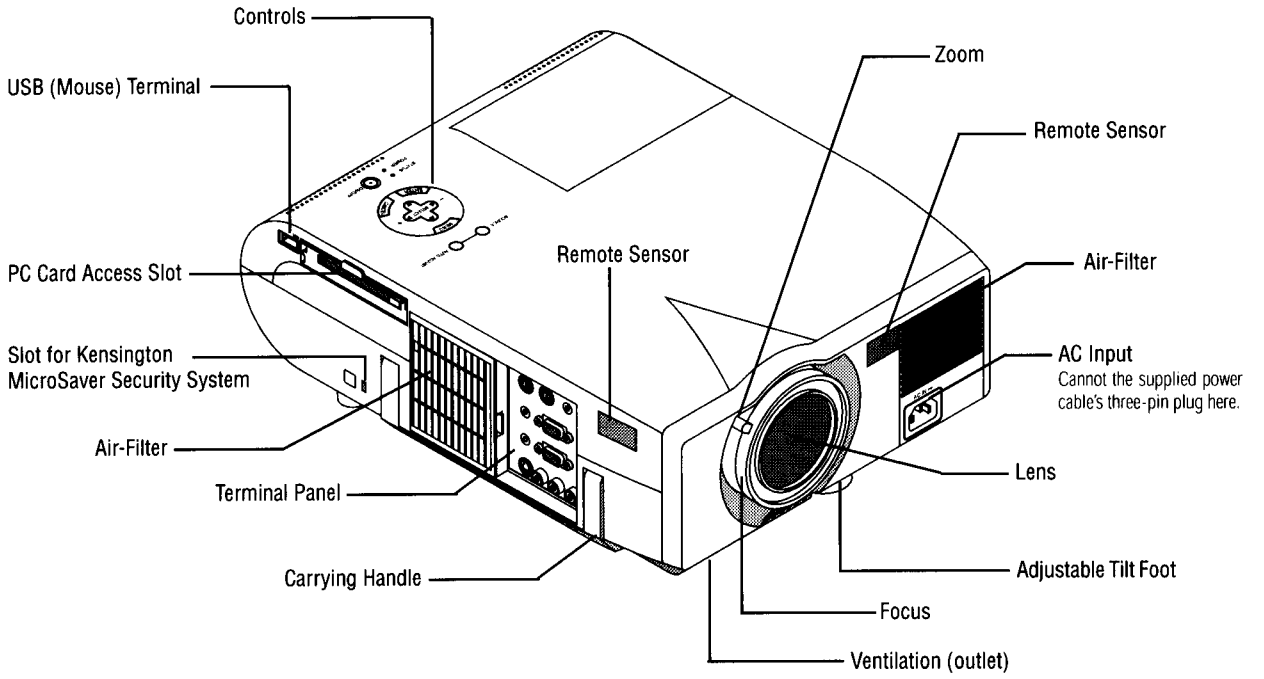
*4 The USB terminal meets the USB1.0 specification and accepts a USB mouse only.

Getting Started

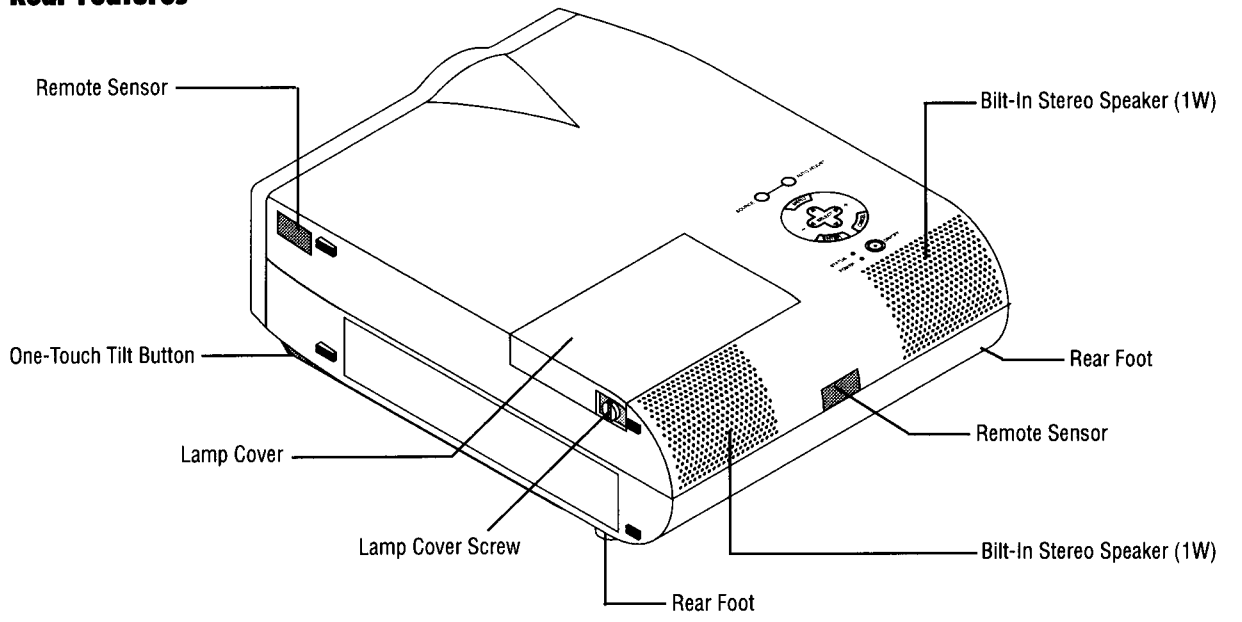
The fastest way to get started is to take your time and do everything right the first time. Take a few minutes now to click through the CD-ROM and review the user's manual. This may save you time later on. At the beginning of each section of the manual you'll find an overview. If the section doesn't apply, you can skip it.

Getting to Know Your MultiSync MT840/MT1040/MT1045 Projector

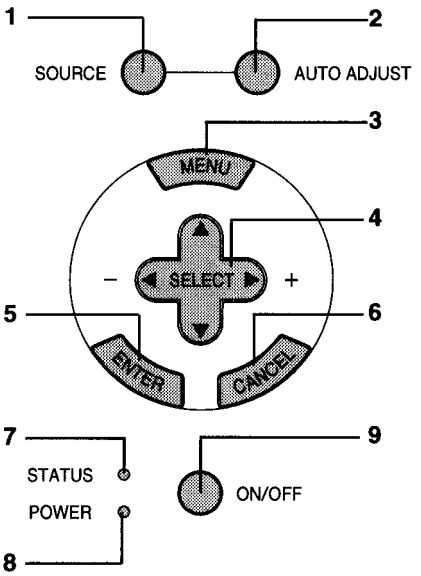
Front Features



Rear Features



Top Features



1 Source Button
Use this button to select a video source such as a PC, VCR, DVD player or PC Card Viewer (PC card installed).

2 Auto Adjust Button
Use this button to adjust Position-H/V and Pixel Clock/Phase for an optimal picture. Some signals may not be displayed correctly or take time to switch to another.

3 Menu Button
Displays the main menu for operation.

4 Select (▲▼◀▶) / (+) (–) Buttons
▲▼: Use these buttons to select the menu of the item you wish to adjust.
◀▶: Use these buttons to change the level of a selected menu item.
A press of the ▶ button executes the selection. When no menus appear, these ◀▶ buttons work as a volume control.
When the pointer is displayed, these ◀▶ ▲▼ buttons move the pointer.

5 Enter Button
Executes your menu selection and activates items selected from the menu.

6 Cancel Button
Press this button to exit "Menus". Press this button to return the adjustments to the last condition while you are in the adjustment or setting menu.

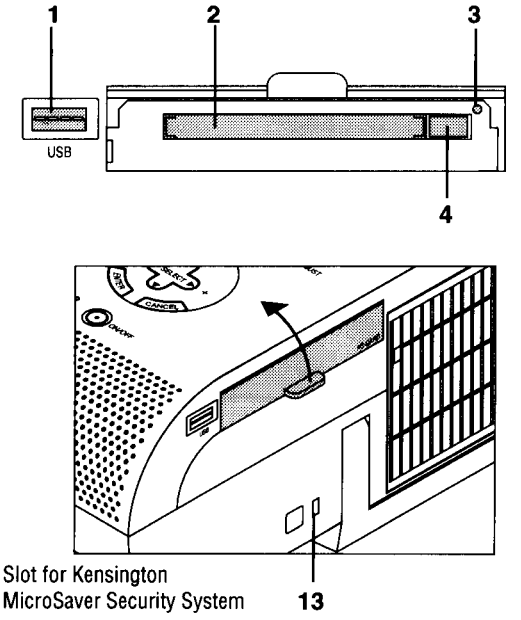
7 Status Indicator
When this is lit red continually, it's warning you that the projection lamp has exceeded 2000 hours (1500 hours : MT1045) of service. After this light appears, it is advisable to replace the projection lamp as soon as possible. (See page E-33)
In addition the message "LAMP USAGE XX HOURS" appears continually when the on-screen menu is not displayed. If this light blinks red rapidly, it indicates that the lamp cover or filter cover is not attached properly or the projector is overheated. See the Status Light Messages on page E-35 for more details.

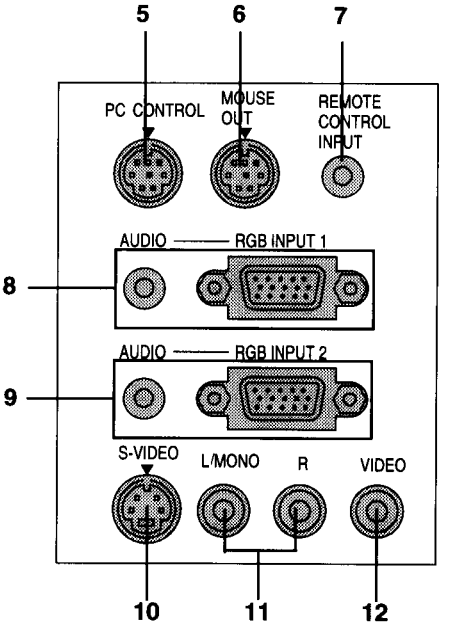
8 Power Indicator
When this indicator is green, the projector is on; when the indicator is amber, it is in standby mode.

9 Power Button
Use this button to turn the power on and off when the power is supplied and the projector is in standby mode.

NOTE: To turn off the projector, press and hold this button for minimum of two seconds.

Terminal Panel Features





1 USB (Mouse) Terminal
Connect a commercially available mouse that supports USB. You can operate the menu or Viewer with the USB mouse via this terminal.
Note that this terminal is not used with a computer and that there may be some brands of USB mouse.

2 PC Card Access Slot
Insert a PC card here.

3 PC Card Access Indicator
Lights while accessing a PC card.

4 Eject Button
Press to eject a PC memory card.

5 PC Control Port (Mini DIN 8 Pin)
Use this port to connect your PC to control your projector.
A cap is put on the port at the factory. Remove the cap when using the port.

6 Mouse Output Port (Mini DIN 8 Pin)
Use this port to operate your computer's mouse functions from the remote control.

7 Remote Control Input Jack
Connect your remote control cable here for wired operation.

8 RGB Audio Input 1 Connector
This is where you connect RGB audio output from a computer or another RGB source.

RGB Input 1 Connector (Mini D-Sub 15 pin)
Connect your PC or other RGB equipment. Use the signal cable that's supplied to connect to a PC.

9 RGB Audio Input 2 Connector
This is where you connect RGB audio output from a computer or another RGB source.

RGB Input 2 Connector(Mini D-Sub 15 pin)
Connect your PC or other RGB equipment. Use the signal cable that's supplied to connect to a PC.

10 S-Video Input Port
Here is where you connect the S-Video input from an external source like a VCR.

11 Left Channel/Mono Audio Input Jack (RCA)
This is the left channel audio input for stereo sound coming from video equipment or audio system. This also serves as your monaural audio input. (Video and S-video only)

Right Channel Audio Input Jack (RCA)
This is the right channel audio input for stereo sound. (Video and S-video only)

NOTE: When using two Video sources simultaneously, the Left Channel Audio Input jack is available for the S-Video source only and the Right Channel Audio Input jack is available for the composite video source only.

12 Video Input
Connect a VCR, DVD player, laser disc player, or document camera here to project video.

13 Built-in Security Slot (🔒)
This security slot supports the MicroSaver® Security System. MicroSaver® is a registered trademark of Kensington Microware Inc. The logo is trademarked and owned by Kensington Microware Inc.

Remote Control Features

NOTE: If you are using a Macintosh computer, you can click either the right or left button to activate the mouse.

1 Source Button
Press to select a video source.

2 Auto Adjust Button
Use this button to adjust Position-H/V and Pixel Clock/Phase for an optimal picture. Some signals may not be displayed correctly, or in some cases it may take some time for a source to be switched to another.

3 Menu Button
Displays the main menu for operation.

4 Mouse (▲▼◀▶) / (+) (–) Buttons
▲▼: Use these buttons to select the menu of the item you wish to adjust.
◀▶: Use these buttons to change the level of a selected menu item.
A press of the ▶ button executes the selection. When no menus appear, these ◀▶ buttons work as a volume control. For the Mouse button to work as the volume control for your computer, you must be in the Projector mode, which is indicated by lighting the Computer/Projector Select button.
When the pointer is displayed, these ◀▶ ▲▼ buttons move the pointer.

NOTE: Works as a mouse for your projected computer image. This pad is also used to adjust position. This pad selects the submenu you want to adjust. After you make your on-screen menu selection, use this pad to adjust the level up or down.

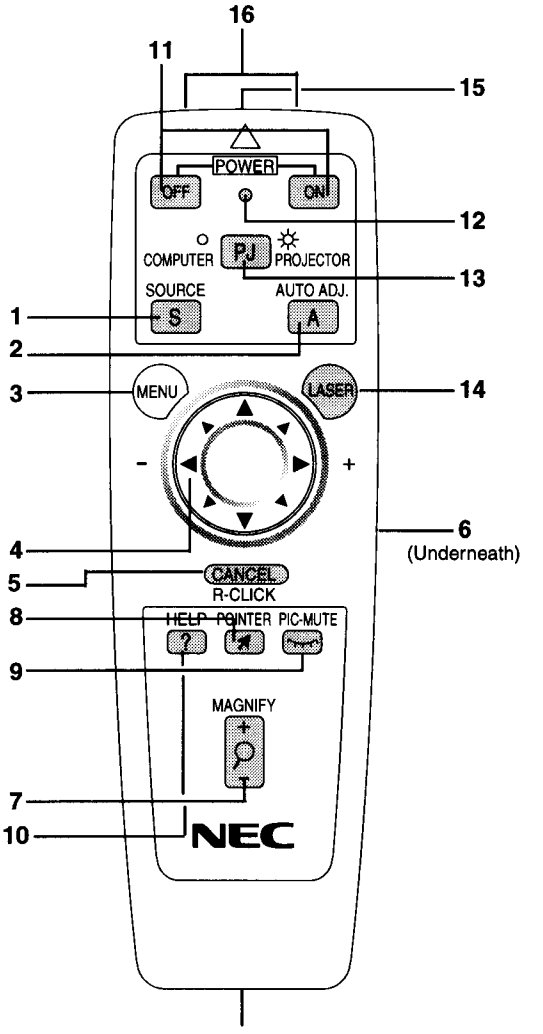
5 Cancel/ Right Click Button
Press this button to exit "Menus". Press this button to return the adjustments to the last condition while you are in the adjustment or setting menu.

6 Left Click / Enter Button
Use this button to enter your menu selection. It works the same as the "Enter" button on the cabinet.

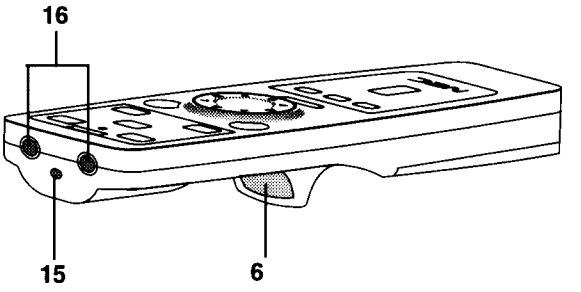
7 Magnify Button
Use the (+) or (–) button to adjust the image size up to 400%. When the Pointer is displayed, the magnified image is displayed at the center of the Pointer. When the Pointer is not displayed, the magnified image is displayed at the center of the screen.
When the image is magnified, the pointer is changed to the magnifying icon.

8 Pointer Button
Press this button to display one of the eight pointers; press again to hide the pointer. You can move your pointer icon to the area you want on the screen using the Mouse button.

Remote Control



Remote Jack
Connect your remote control cable here for wired operation.



9 Picture Mute Button
This button turns off the image and sound for a short period of time. Press again to restore the image and sound.

10 Help Button
Provides information about operation and adjustment procedures or the set information for the current menu or adjustment during menu operation. This also displays information how to use the Help.

11 Power On And Off
If power is applied, you can use this button to turn your projector on and off.

NOTE: To turn off the projector, press and hold the POWER OFF button for a minimum of two seconds.

12 LED
Flashes when any button is pressed.

13 Computer/Projector Select
Use this button to switch between "Computer" and "Projector". When "Computer" is selected, the remote control works as your computer mouse. In this mode only Mouse pad, Laser, R-Click and L-Click buttons are available. This button lights to indicates that you are in the Projector mode.

14 Laser Button
Press and hold this button to activate the laser pointer. When lit, you can use the laser to draw your audience's attention to a red dot that you can place on any object within 30 feet (10 m).

15 Laser Pointer
Beams a laser light when "Laser" button is pressed.

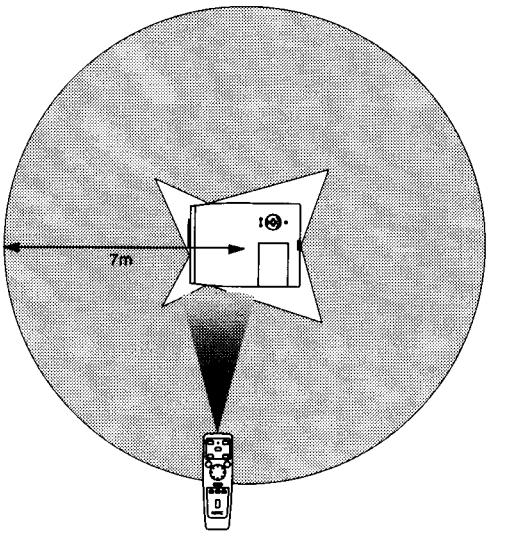
16 Infrared Transmitter
Direct the remote control toward the remote sensor on the projector cabinet.

NOTE: When either the Menu, Help or Pointer button is pressed, the Computer/Projector Select button lights in red to indicate that your projector is in the Projector mode. If no buttons are pressed within 10 seconds, the light goes out and the Projector mode is canceled.

Remote Control Precautions

- Handle the remote control carefully.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- If you will not be using the remote control for a long time, remove the battery.
- Do not place the batteries upside down.
- Do not look into the laser pointer while it is on.
- Do not point the laser beam at a person.

Operating Range



2. INSTALLATION

This section describes how to set up your MultiSync MT840/MT1040/MT1045 projector and how to connect video and audio sources.

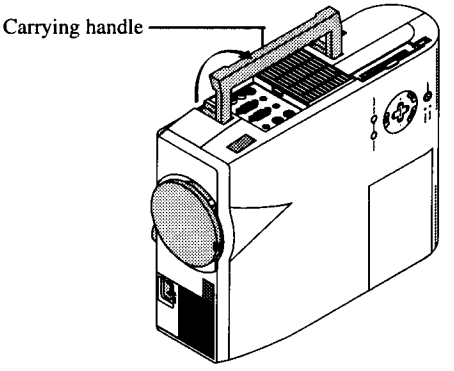
Setting up Your Projector

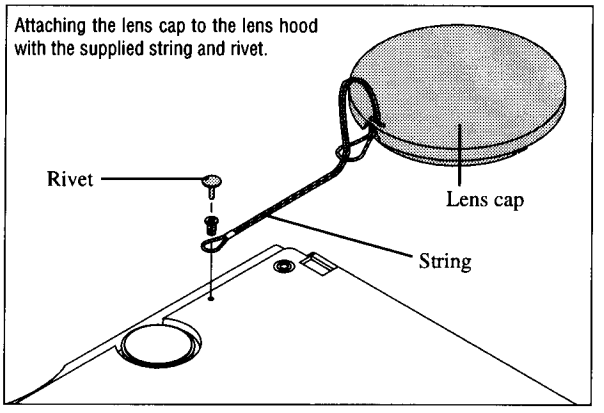
Your MultiSync MT840/MT1040/MT1045 Projector is simple to set up and use. But before you get started, you must first:

1. Determine the image size.
2. Set up a screen or select a non-glossy white wall onto which you can project your image.

Carrying the Projector: Always carry your projector by the handle. Ensure that the power cable and any other cables connecting to video sources are disconnected before moving the projector.

When moving the projector or when it is not in use, cover the lens with the lens cap.



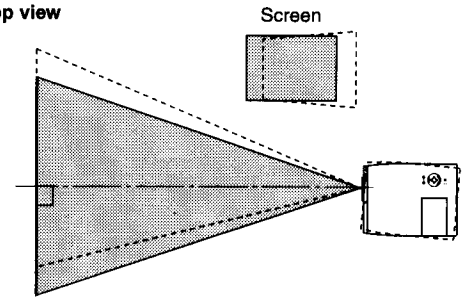


Selecting a Location

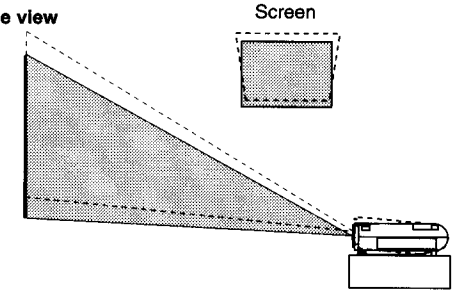
The further your projector is from the screen or wall, the larger the image. The minimum size the image can be is approximately 30" (0.76 m) measured diagonally when the projector is roughly 4 feet (1.3 m) from the wall or screen. The largest the image can be is 300" (7.6 m) when the projector is about 36.8 feet (11.2 m) from the wall or screen.

Using a Tabletop or Cart

1. Place your projector on a flat level surface at the optimal distance from the screen or wall so you realize the size image you want. (Avoid having bright room lighting or sun light directly on the screen or wall where you'll be projecting the image.)
2. Connect the power cable, remove the lens cap and turn the projector on. (If no input signal is available, the projector will display a background image.)
3. Ensure that the projector is square to the screen.

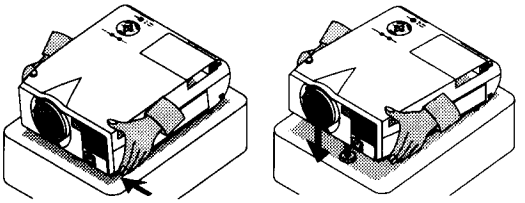


4. Move the projector left or right to center the image horizontally on the screen.
5. To center the image vertically, lift the front edge of the projector and press the One-Touch Tilt button on the front-left side of the projector to release the Front Adjustable foot.



(There is approximately 5 degrees of up and down adjustment for the front of the projector.)

Adjusting the Tilt Foot



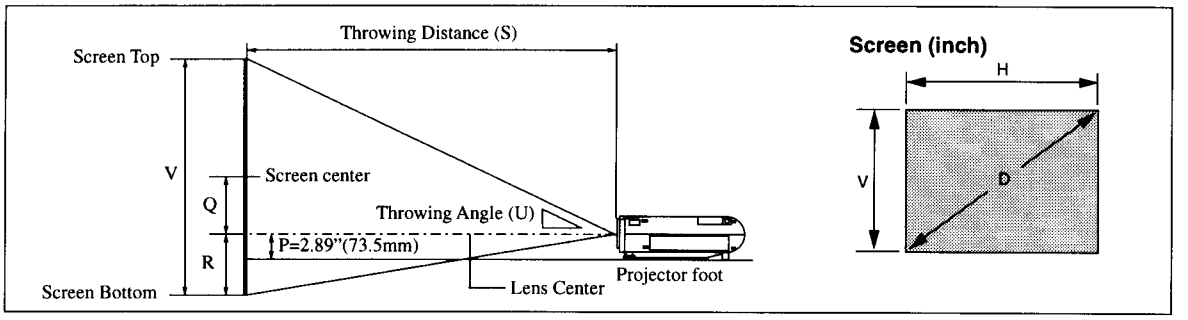
Press and hold the Tilt button on the left side of the projector.

Lift the front edge of the projector to the height you want, and release the button to lock the Adjustable Tilt Foot.

To fine-tune the image's position vertically on the screen, rotate the foot. Each of the rear feet height can be changed up to 0.6" (4mm).

6. If the projected image does not appear square to the screen then use keystone correction for proper adjustment.
7. Adjust the size of the image using the Zoom ring on the lens.

Distance Chart



MT840

Screen Size D	Diagonal	(inch)	30	40	60	80	100	120	150	180	200	240	300
	Width(H)	(inch)	24	32	48	64	80	96	120	144	160	192	240
	Width(V)	(inch)	18	24	36	48	60	72	90	108	120	144	180
Magnification K			23.1	30.8	46.2	61.5	76.9	92.3	115.4	138.5	153.9	184.6	230.8
Throwing Distance S	Wide	(inch)	42.2	57.0	86.5	116.1	145.6	175.2	219.6	263.9	293.5	352.6	441.3
		(mm)	1071.1	1446.5	2197.5	2948.4	3699.4	4450.4	5576.8	6703.2	7454.2	8956.1	11208.9
	Tele	(inch)	51.0	68.8	104.3	139.7	175.2	210.7	263.9	317.1	352.6	423.6	530.0
		(mm)	1296.3	1746.9	2648.0	3549.2	4450.3	5351.4	6703.1	8054.8	8956.0	10758.2	13461.6
Throwing Angle U	Wide	(degree)	10.4	10.2	10.1	10.1	10.0	10.0	10.0	10.0	10.0	9.9	9.9
	Tele	(degree)	8.6	8.5	8.4	8.4	8.4	8.3	8.3	8.3	8.3	8.3	8.3
V		(inch)	18.0	24	36	48	60	72	90	108	120	144	180
		(mm)	457.2	609.6	914.4	1219.2	1524	1828.8	2286	2743.2	3048	3657.6	4572
Q		(inch)	7.7	10.3	15.4	20.6	25.7	30.9	38.6	46.3	51.5	61.8	77.2
		(mm)	196.2	261.6	392.3	523.1	653.9	784.7	980.8	1177.0	1307.8	1569.3	1961.7
R		(inch)	1.3	1.7	2.6	3.4	4.3	5.1	6.4	7.7	8.5	10.2	12.8
		(mm)	32.4	43.2	64.9	86.5	108.1	129.7	162.2	194.6	216.2	259.5	324.3
P		(inch)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
		(mm)	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5
Q+P		(inch)	10.6	13.2	18.3	23.5	28.6	33.8	41.5	49.2	54.4	64.7	80.1
		(mm)	269.7	335.1	465.8	596.6	727.4	858.2	1054.3	1250.5	1381.3	1642.8	2035.2

MT1040

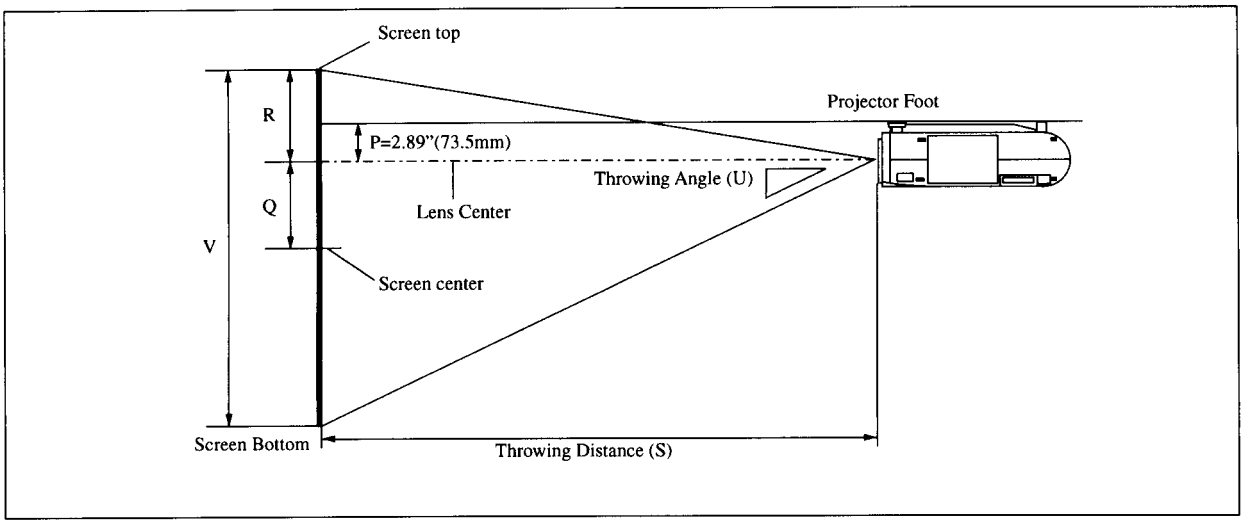
Screen Size D	Diagonal	(inch)	30	40	60	80	100	120	150	180	200	240	300
	Width(H)	(inch)	24	32	48	64	80	96	120	144	160	192	240
	Width(V)	(inch)	18	24	36	48	60	72	90	108	120	144	180
Magnification K			22.9	30.5	45.8	61.1	76.3	91.6	114.5	137.4	152.6	183.2	229.0
Throwing Distance S	Wide	(inch)	41.8	56.5	85.8	115.1	144.5	173.8	217.8	261.8	291.1	349.8	437.8
		(mm)	1062.2	1434.7	2179.8	2924.8	3669.8	4414.9	5532.4	6650.0	7395.0	8885.1	11120.3
	Tele	(inch)	50.6	68.2	103.4	138.6	173.8	209.0	261.8	314.6	349.8	420.2	525.8
		(mm)	1285.7	1732.7	2626.7	3520.8	4414.8	5308.9	6649.9	7991.0	8885.0	10673.1	13355.2
Throwing Angle U	Wide	(degree)	10.4	10.3	10.1	10.1	10.0	10.0	10.0	10.0	10.0	9.9	9.9
	Tele	(degree)	8.6	8.5	8.4	8.4	8.4	8.3	8.3	8.3	8.3	8.3	8.3
V		(inch)	18.0	24	36	48	60	72	90	108	120	144	180
		(mm)	457.2	609.6	914.4	1219.2	1524	1828.8	2286	2743.2	3048	3657.6	4572
Q		(inch)	7.7	10.2	15.3	20.4	25.5	30.6	38.3	46.0	51.1	61.3	76.6
		(mm)	194.6	259.5	389.2	519.0	648.7	778.5	973.1	1167.7	1297.5	1557.0	1946.2
R		(inch)	1.3	1.8	2.7	3.6	4.5	5.4	6.7	8.0	8.9	10.7	13.4
		(mm)	34.0	45.3	68.0	90.6	113.3	135.9	169.9	203.9	226.5	271.8	339.8
P		(inch)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
		(mm)	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5
Q+P		(inch)	10.6	13.1	18.2	23.3	28.4	33.5	41.2	48.9	54.0	64.2	79.5
		(mm)	268.1	333.0	462.7	592.5	722.2	852.0	1046.6	1241.2	1371.0	1630.5	2019.7

MT1045

Screen Size D	Diagonal	(inch)	30	40	60	80	100	120	150	180	200	240	300
	Width(H)	(inch)	24	32	48	64	80	96	120	144	160	192	240
	Width(V)	(inch)	18	24	36	48	60	72	90	108	120	144	180
Magnification K			22.9	30.5	45.8	61.1	76.3	91.6	114.5	137.4	152.6	183.2	229.0
Throwing Distance S	Wide	(inch)	41.4	56.3	86.1	115.8	145.5	175.3	219.9	264.5	294.2	353.7	443.0
		(mm)	1052.6	1430.3	2185.8	2941.2	3696.6	4452.1	5585.2	6718.4	7473.8	8984.7	11251.0
	Tele	(inch)	50.8	68.6	104.3	140.0	175.7	211.4	264.9	318.4	354.1	425.4	532.5
		(mm)	1290.5	1743.7	2649.9	3556.2	4462.4	5368.7	6728.0	8087.4	8993.7	10806.2	13524.9
Throwing Angle U	Wide	(degree)	10.5	10.3	10.1	10.0	10.0	9.9	9.9	9.9	9.8	9.8	9.8
	Tele	(degree)	8.6	8.5	8.4	8.3	8.3	8.3	8.2	8.2	8.2	8.2	8.2
V		(inch)	18	24	36	48	60	72	90	108	120	144	180
		(mm)	457.2	609.6	914.4	1219.2	1524	1828.8	2286	2743.2	3048	3657.6	4572
Q		(inch)	7.7	10.2	15.3	20.4	25.5	30.6	38.3	46.0	51.1	61.3	76.6
		(mm)	194.6	259.5	389.2	519.0	648.7	778.5	973.1	1167.7	1297.5	1557.0	1946.2
R		(inch)	1.3	1.8	2.7	3.6	4.5	5.4	6.7	8.0	8.9	10.7	13.4
		(mm)	34.0	45.3	68.0	90.6	113.3	135.9	169.9	203.9	226.5	271.8	339.8
P		(inch)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
		(mm)	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5	73.5
Q+P		(inch)	10.6	13.1	18.2	23.3	28.4	33.5	41.2	48.9	54.0	64.2	79.5
		(mm)	268.1	333.0	462.7	592.5	722.2	852.0	1046.6	1241.2	1371.0	1630.5	2019.7

NOTE: Distances may vary +/–5%.

Ceiling Installation



WARNING

- Installing your projector on the ceiling must be done by a qualified technician. Contact your NEC dealer for more information.
- * Do not attempt to install the projector yourself.
- Only use your projector on a solid, level surface. If the projector falls to the ground, you can be injured and the projector severely damaged.
- Do not use the projector where temperatures vary greatly. The projector must be used at temperatures between 32°F (0°C) and 104°F (40°C).
- Do not expose the projector to moisture, dust, or smoke. This will harm the screen image.
- Ensure that you have adequate ventilation around your projector so heat can dissipate. Do not cover the vents on the side or the front of the projector.

If your projector is mounted on the ceiling and your image is upside down, use the "Menu" and "Select" buttons on your projector cabinet or ▲▼ button on your remote control to correct the orientation. (See page E-23.)

Reflecting the Image

Using a mirror to reflect your projector's image enables you to enjoy a much larger image. Contact your NEC dealer if you need a mirror. If you're using a mirror and your image is inverted, use the "Menu" and "Select" buttons on your projector cabinet or ▲▼ buttons on your remote control to correct the orientation. (See page E-23.)

When using a Macintosh with the projector, set the DIP switches of the supplied pin adapter according to your resolution. After setting, restart your Macintosh.
See the following pages for setting of the DIP switches.

- When using with a Macintosh, SVGA(800×600 :MT840)/ XGA(1024×768 : MT1040/MT1045) is recommended if your Macintosh supports this mode.
- When using with a Macintosh PowerBook, output may not be set to 800×600 unless "mirroring" is off on your PowerBook. Refer to owner's manual supplied with your Macintosh computer for mirroring.

NOTE: A Video Adapter cable manufactured by Apple Computer is needed for a PowerBook which does not have a mini D-Sub 15-pin connector.

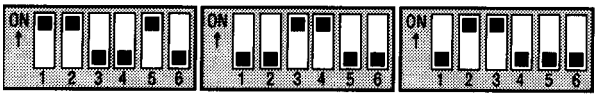
Settings for Monitor Mode

Number of DIP switch / Resolution	1	2	3	4	5	6
13" multi-scan mode /16"-13"	ON	ON			ON	ON
17" multi-scan mode /19"-13"	ON	ON			ON	
21" multi-scan mode /21"-13"	ON	ON				ON
13" fixed mode /640x480	ON	ON				
VGA/SVGA mode			ON	ON		
16" fixed mode /832x624		ON		ON		
19" fixed mode /1024x768		ON	ON			
21" fixed mode /1152x870	ON	ON	ON	ON		

NOTE: For settings other than display modes supported by your Macintosh and the projector, use of the DIP switch may bounce an image slightly or may display nothing. If this happens, set the DIP switch to the 13" fixed mode and then restart your Macintosh. After that, restore to a displayable mode and then restart the Macintosh again. Make sure that the projector and your Macintosh are connected with the pin adapter and the supplied signal cable (mini D-Sub 15-pin connector) and then restart your Macintosh.

Examples of DIP switch setting

17" multi-scan mode VGA/SVGA mode 19" fixed mode



NOTE: Refer to your computer's owner's manual for more information about your computer's video output requirements and any special identification or configuring your projector's image and monitor may require.

Connecting Your DVD Player

You can connect your projector to a DVD player with component outputs or Video output. To do so, simply:

1. Turn off the power to your projector and DVD player.
2. If your DVD player has the component video (Y,Cb,Cr) output, use the optional 15-pin-to-RCA x 3 cable to connect your DVD player to the RGB INPUT connector on the projector.
   For a DVD player without component video (Y,Cb,Cr) outputs, use common RCA cables (not provided) to connect a composite VIDEO output of the DVD player to the Video Input of the projector.
3. Turn on the projector and the DVD player.

NOTE: Refer to your DVD player's owner's manual for more information about your DVD player's video output requirements.

Connecting Your VCR Or Laser Disc Player

Use common RCA cables (not provided) to connect your VCR or laser disc player to your projector. To make these connections, simply:

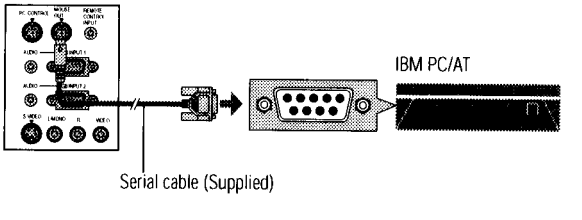
1. Turn off the power to the projector and VCR or laser disc player.
2. Connect one end of your RCA cable to the video output connector on the back of your VCR or laser disc player, connect the other end to the Video input on your projector. Use standard RCA audio patch cords to connect the audio from your VCR or laser disc player to the projector (if your VCR or laser disc player has this capability). Be careful to keep your right and left channel connections correct for stereo sound.
3. Turn on the projector and the VCR or laser disc player.

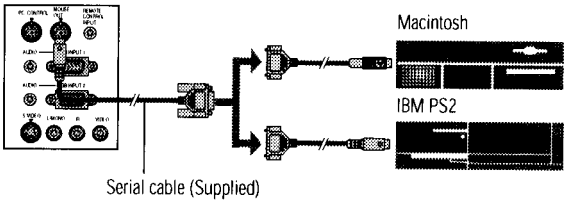
NOTE: Refer to your VCR or laser disc player owner's manual for more information about your equipment's video output requirements.

Connecting Your Computer to the Mouse Output Port

The built-in remote mouse receiver enables you to operate your computer's mouse functions from the remote control. It is a great convenience for clicking through your computer-generated presentations.
To connect the mouse output port:

1. Turn off your computer.
2. For PCs: Remove your current mouse and connect the supplied serial cable from the mouse output to your PC's mouse port. (Use the 6-pin adapter for connecting to a PS/2 computer.)
   For Macintosh: Remove your current mouse from your computer, attach the Macintosh adapter to the mouse output port's serial cable, and connect the projector to your mouse port.
3. When the built-in remote mouse receiver is available, it will disable your regular mouse, disconnect the serial cable and restart your computer.





NOTE:Some computers or software programs may not work with the MOUSE OUT port.

3.OPERATION

This section describes how to select a computer or video source, how to adjust the picture, and how to customize the menu or projector settings.

General Controls

Before you turn on your projector, ensure that the computer or video source is turned on and that your lens cap is removed.

1. **Turn on the Projector**
   Plug the supplied power cable in the wall outlet. The projector will go into its standby mode and the power indicator will glow amber.
   Only after you press the "On" button on the projector cabinet or the full function remote control will the power indicator turn to green and the projector become ready to use.

   NOTE: To turn the projector on by plugging in the power cable, use the menu and enable the "Auto Start" feature. (See page E-23.)

2. **Select the Computer, Video Source or PC Card Viewer**
   Press the Source button on the remote control or the projector cabinet to select "Video" (VCR, document camera, or laser disc player), S-Video", "RGB 1 / 2" (computer or DVD with component output) or "PC Card Viewer" to display the image.
   Or press the "Menu" button on the remote control or the cabinet and use the menu to select your video source: "Video", "S-Video", "RGB1 / 2", or "PC Card Viewer".
3. **Adjust the Image Size and the Focus**
   Use the Zoom ring to adjust the image size, then use the Focus ring knob to obtain the best focus.
   Use the "Magnify" button (+) or (-) on the remote control to make the image larger up to 400%.
4. **Turning off the Projector**
   First press the "off" button on the projector cabinet or the remote control for a minimum of two seconds. The power indicator will glow amber. Then, unplug the power cable. The power indicator will go out.

IMPORTANT:

- The projector should be unplugged if it will not to be used for an extended period.
- To turn off the image and sound briefly (five minutes or less), use the "Picture Mute" button instead of turning the projector off and on.
- The projector will display a black, blue image or logo if no input signal is present.
- Do not turn the projector off and then immediately back on. The projector needs to cool for a minute before it can be restarted.

After the projector turns off, the cooling fans keep operating for a full minute.
Do not disconnect the power cable during this time.

Using the Menus

NOTE: The on-screen menu may not be displayed correctly while interlaced motion video image is projected.

1. Press the "Menu" button on the remote control or projector cabinet to display the Main Menu.

   NOTE: When using a USB mouse, click the mouse button to display the main menu. For other operations, do the same way as you use your PC mouse.

2. Press the ▲▼ buttons on the full function remote control or the projector cabinet to highlight the menu for the item you want to adjust or set.
3. Press the ▶ button or the "Enter" button on the projector cabinet or the "Left Click" button on the full function remote control to select a submenu or item.
4. Adjust the level or turn the selected item on or off by using "Select" ◀ or ▶ buttons on the cabinet, or the "Mouse pad" on the full fucntion remote control. The on-screen slide bar will show you the amount of increase or decrease.
5. The change is stored until you adjust it again.

   ENTER: Stores the setting or adjustments.

   CANCEL: Return to the previous screen without storing settings or adjustments.

   NOTE: You can close the main and sub menus simultaneously by pressing the Computer/Projector Select button to cancel the Projector mode.

6. Repeat steps 2-5 to adjust an additional item, or press "Cancel" on the projector cabinet or the remote control to quit the menu display.

Using a USB Mouse

Using a USB mouse gives you a smooth operation. A commercially available USB mouse is required.

NOTE:There may be some brands of USB mouse that the projector does not support.

Operate the Menus using the USB mouse

Mouse Cursor

When connecting a USB mouse to the projector, you get a mouse cursor on the screen.
Unless you use your USB mouse within 10 seconds, the mouse cursor disappears.

Menu Display

Clicking with a mouse button displays the main menu.
Clicking ▶ displays the pull-down menu.
To close the menu, click anywhere in the background.

Adjusting and Setting Display

You can select a menu item and click with a mouse button to make adjustments and setting.

Examples

Click (or press and hold) the mouse button ◀ or ▶ to adjust the brightness.
Or click and drag the mouse button on the slide bar horizontally to adjust it.
To save the adjustments, click ☒. The display is closed.
If you click anywhere in the background while displaying adjustment and setting menu or dialog box, you will get the main menu at the clicking point.

3.OPERATION

This section describes how to select a computer or video source, how to adjust the picture, and how to customize the menu or projector settings.

General Controls

Before you turn on your projector, ensure that the computer or video source is turned on and that your lens cap is removed.

1. **Turn on the Projector**
   Plug the supplied power cable in the wall outlet. The projector will go into its standby mode and the power indicator will glow amber.
   Only after you press the "On" button on the projector cabinet or the full function remote control will the power indicator turn to green and the projector become ready to use.

   NOTE: To turn the projector on by plugging in the power cable, use the menu and enable the "Auto Start" feature. (See page E-23.)

2. **Select the Computer, Video Source or PC Card Viewer**
   Press the Source button on the remote control or the projector cabinet to select "Video" (VCR, document camera, or laser disc player), S-Video", "RGB 1 / 2" (computer or DVD with component output) or "PC Card Viewer" to display the image.
   Or press the "Menu" button on the remote control or the cabinet and use the menu to select your video source: "Video", "S-Video", "RGB1 / 2", or "PC Card Viewer".
3. **Adjust the Image Size and the Focus**
   Use the Zoom ring to adjust the image size, then use the Focus ring knob to obtain the best focus.
   Use the "Magnify" button (+) or (-) on the remote control to make the image larger up to 400%.
4. **Turning off the Projector**
   First press the "off" button on the projector cabinet or the remote control for a minimum of two seconds. The power indicator will glow amber. Then, unplug the power cable. The power indicator will go out.

IMPORTANT:

- The projector should be unplugged if it will not to be used for an extended period.
- To turn off the image and sound briefly (five minutes or less), use the "Picture Mute" button instead of turning the projector off and on.
- The projector will display a black, blue image or logo if no input signal is present.
- Do not turn the projector off and then immediately back on. The projector needs to cool for a minute before it can be restarted.

After the projector turns off, the cooling fans keep operating for a full minute.
Do not disconnect the power cable during this time.

Using the Menus

NOTE: The on-screen menu may not be displayed correctly while interlaced motion video image is projected.

1. Press the "Menu" button on the remote control or projector cabinet to display the Main Menu.

   NOTE: When using a USB mouse, click the mouse button to display the main menu. For other operations, do the same way as you use your PC mouse.

2. Press the ▲▼ buttons on the full function remote control or the projector cabinet to highlight the menu for the item you want to adjust or set.
3. Press the ▶ button or the "Enter" button on the projector cabinet or the "Left Click" button on the full function remote control to select a submenu or item.
4. Adjust the level or turn the selected item on or off by using "Select" ◀ or ▶ buttons on the cabinet, or the "Mouse pad" on the full fucntion remote control. The on-screen slide bar will show you the amount of increase or decrease.
5. The change is stored until you adjust it again.

   ENTER: Stores the setting or adjustments.

   CANCEL: Return to the previous screen without storing settings or adjustments.

   NOTE: You can close the main and sub menus simultaneously by pressing the Computer/Projector Select button to cancel the Projector mode.

6. Repeat steps 2-5 to adjust an additional item, or press "Cancel" on the projector cabinet or the remote control to quit the menu display.

Using a USB Mouse

Using a USB mouse gives you a smooth operation. A commercially available USB mouse is required.

NOTE:There may be some brands of USB mouse that the projector does not support.

Operate the Menus using the USB mouse

Mouse Cursor

When connecting a USB mouse to the projector, you get a mouse cursor on the screen.
Unless you use your USB mouse within 10 seconds, the mouse cursor disappears.

Menu Display

Clicking with a mouse button displays the main menu.
Clicking ▶ displays the pull-down menu.
To close the menu, click anywhere in the background.

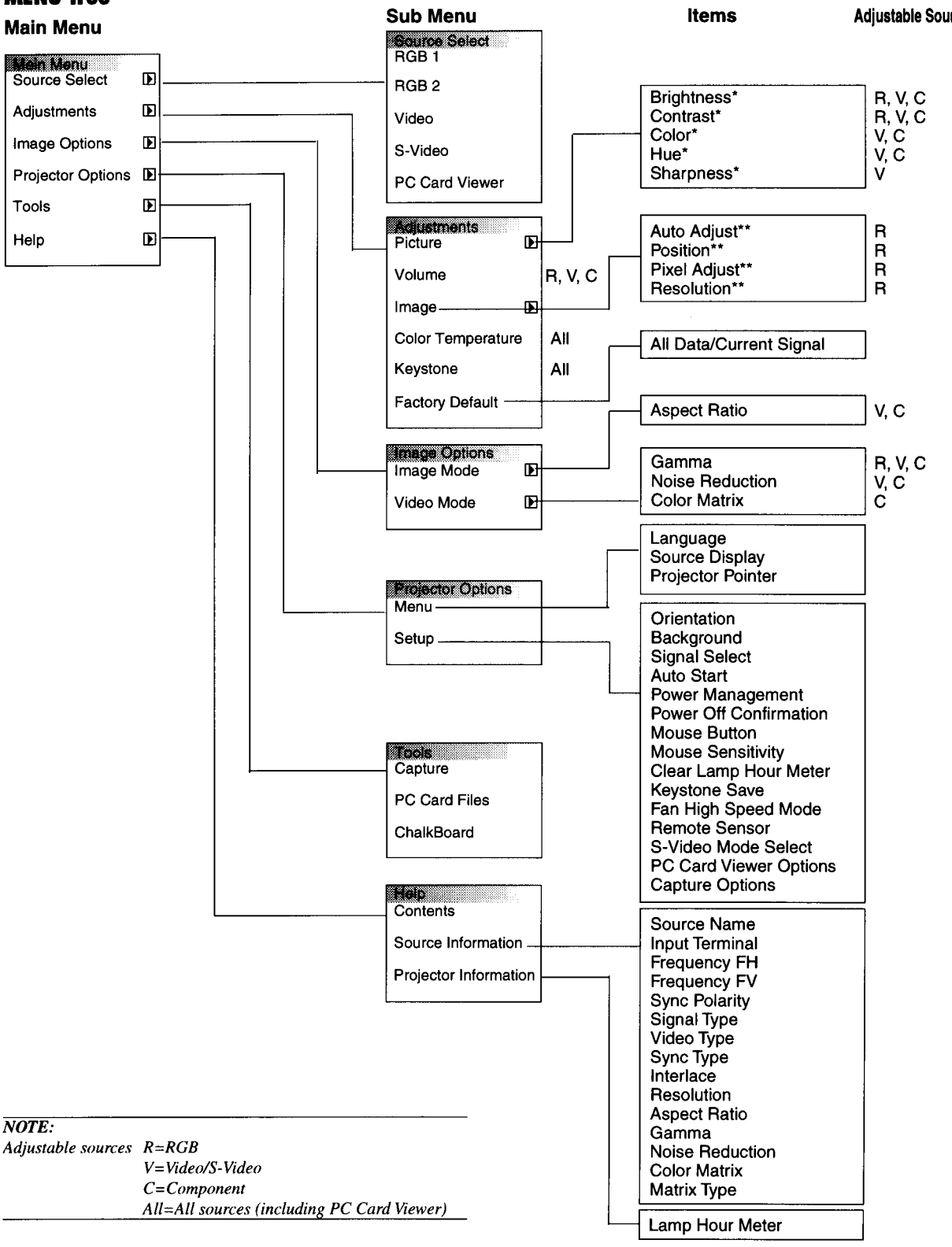
Adjusting and Setting Display

You can select a menu item and click with a mouse button to make adjustments and setting.

Examples

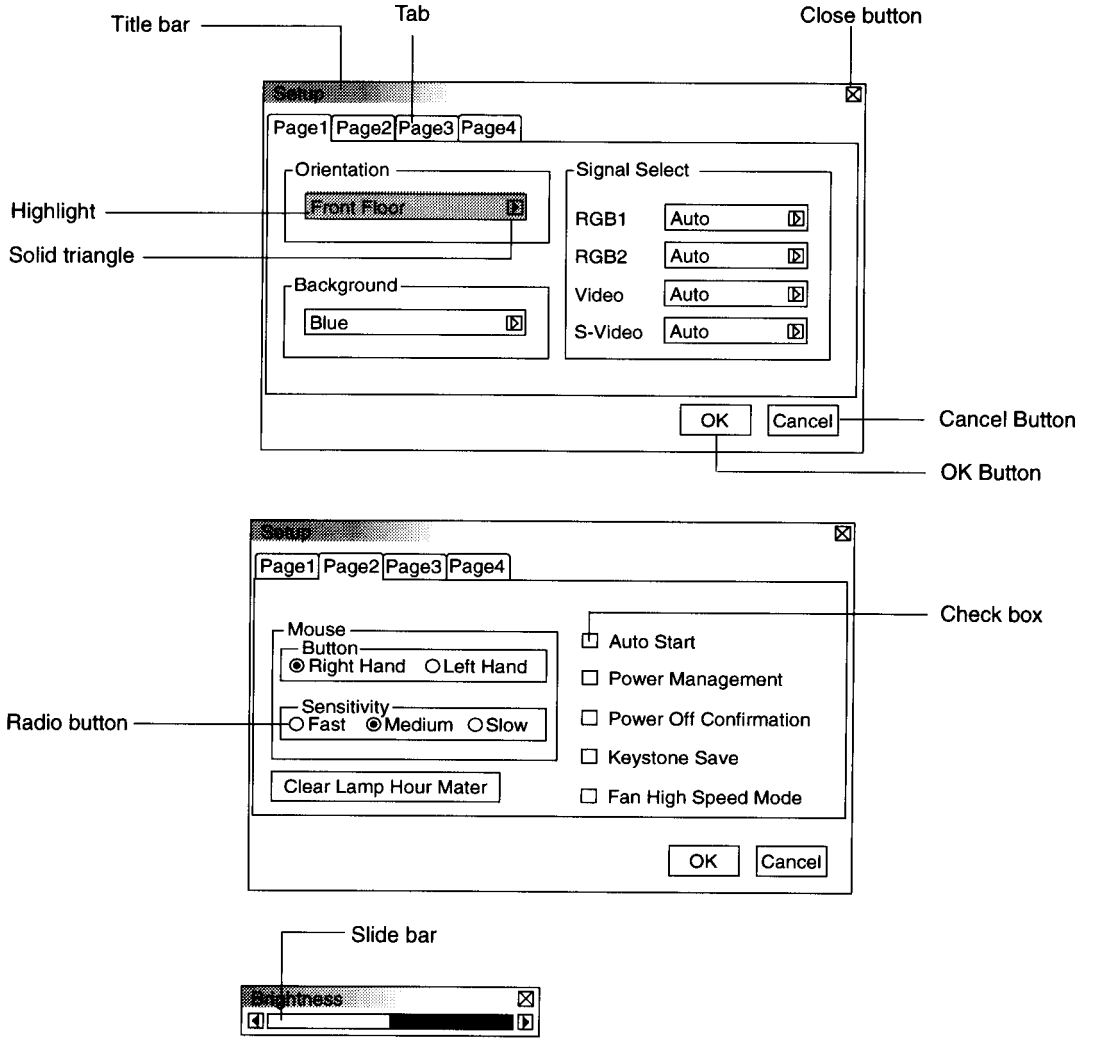
Click (or press and hold) the mouse button ◀ or ▶ to adjust the brightness.
Or click and drag the mouse button on the slide bar horizontally to adjust it.
To save the adjustments, click ☒. The display is closed.
If you click anywhere in the background while displaying adjustment and setting menu or dialog box, you will get the main menu at the clicking point.

MENU Tree



NOTE:
Adjustable sources *R=RGB*
V=Video/S-Video
C=Component
All=All sources (including PC Card Viewer)

Menu Elements

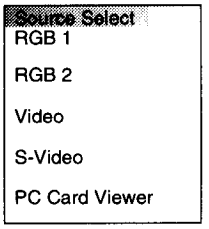


Menu windows or dialog box typically have the following elements:

Title bar: Indicates the menu title.
X Close button: Click to close the window with saving changes. (USB mouse only)
Highlight: Indicates the selected menu or item.
Solid triangle: Indicates further choices are available. A highlighted triangle indicates the item is active.
Tab: Indicates a group of features in a dialog box. Clicking on any tab brings its page to the front.
Radio button: Use this round button to select an option in a dialog box.
Check box: Place a checkmark in the square box to turn the option On.
Slide bar: Indicates settings or the direction of adjustment.
OK button: Press to confirm your setting. You will return to the previous menu.
Cancel button: Press to cancel your setting. You will return to the previous menu.

Menu Descriptions & Functions

Source Select



Enables you to select a video source such as a VCR, DVD player, laser disc player, computer or document camera depending on what is connected to your inputs. Press the "Select" button on the projector cabinet or ▲▼ buttons on your remote control to highlight the menu for the item you want to adjust.

RGB1 and 2
Selects the computer connected to your RGB or component signal.

NOTE: An optional component cable (Component V cable) is needed for a component signal. Select "Component" from the Input Signal submenu to display the component signal.

Video
Selects what is connected to your Video input-VCR, laser disc player, DVD player or document camera.

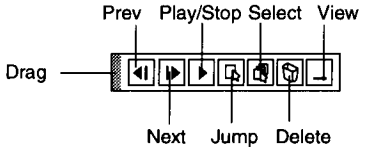
S-Video
Selects what is connected to your S-Video input-VCR, DVD player, or laser disc player.

NOTE: A frame may freeze for a brief period of time when a video is played back in fast-forward or fast-rewind with a Video or S-Video source.

PC Card Viewer
This feature enables you to make presentations using a PC card that contains captured images and slides created with the exclusive PC Card Viewer Utility contained in the CD-ROM. See page E-27 for installing the PC Card Viewer Utility. The starting screen for the PC Card Viewer varies depending on the settings of the Setup's Page 3. See Setup on page E-24.

NOTE: Even if you switch the current PC Card Viewer source to another source, the current slide is retained. When you return back to the PC Card Viewer, you will get the slide that has been retained.

A launcher will appear when you press the MENU button.



The launcher is a tool bar including the following buttons:

Drag: Drags to move the tool bar. (for USB mouse operation only)

Prev: Returns to the previous slide or folder.

Next: Advances to the next slide or folder.

Play/Stop: Plays back automatically or manually depending on the setting on PC Card Viewer Options of the menu. This allows you to stop Auto Play while you are playing back and to resume playing from the selected slide or folder when "Auto Play" is selected. This allows you to move on to the next slide when "Manual Play" is selected.

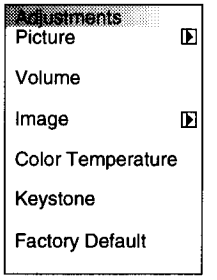
Jump: Displays a list of slides while you are playing back.

Select: Displays a list of folders while you are playing back.

Delete: Deletes a captured slide(s) or all the captured slides in the selected folder.

View: Hides the tool bar while you are playing back. Clicking with the right button of a mouse shows it again.

Adjustments



Provides access to controls for your image and sound. Use the "Select" button on the projector cabinet or ▲▼ buttons on your remote control to highlight the menu for the item you want to adjust.

Picture (not available for PC Card Viewer)

Brightness: Adjusts the brightness level or the back raster intensity.

Contrast: Adjusts the intensity of the image according to the incoming signal.

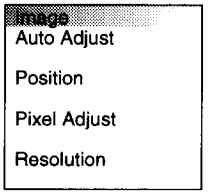
Color: Increases or decreases the color saturation level (not valid for RGB).

Hue: Varies the color level from +/- green to +/-blue. The red level is used as reference. This adjustment is only valid for Video and Component inputs (Not RGB).

Sharpness: Controls the detail of the image for Video (Not for RGB and Component).

Volume (not available for PC Card Viewer)
Adjusts the sound level of the projector.

Image



Allows for adjustments of the image position and stability.

Auto Adjust:

When "Auto Adjust" is set to "On", the projector automatically determines the best resolution for the current RGB input signal to project an image using NEC's Advanced AccuBlend Intelligent Pixel Blending Technology.

The image can be automatically adjusted for geometry and stability; "Horizontal Position", "Vertical Position" and "Pixel Adjust."

On: Automatically adjusts image "Horizontal Position", "Vertical Position" and "Pixel Adjust."

Off: User can adjust the image display functions ("Horizontal Position", "Vertical Position" and "Pixel Adjust") manually.

Horizontal/Vertical Position (when Auto Adjust is off):

Adjusts the image location from left to right.

This adjustment is made automatically when the Auto Adjust is turned on.

Pixel Adjust (when Auto Adjust is off):

Displays the Clock and Phase adjustments.

Clock: Use this item with the "Auto Adjust on" to fine tune the computer image or to remove any vertical banding that might appear. This function adjusts the clock frequencies that eliminate the horizontal banding in the image. Press the ◀ and ▶ buttons until the banding disappears. This adjustment may be necessary when you connect your computer for the first time. This adjustment is made automatically when the Auto Adjust is turned on.

Phase: Use this item to adjust the clock phase or to reduce video noise, dot interference or cross talk. (This is evident when part of your image appears to be shimmering.) Use the ◀ and ▶ buttons to adjust the image.

Use "Phase" only after the "Clock" is complete.

This adjustment is made automatically when the Auto Adjust is turned on.

Resolution (when Auto Adjust is off):

This allows you to activate or deactivate the Advanced AccuBlend feature.

Auto: Turns on the Advanced AccuBlend feature. The projector automatically reduces or enlarges the current image to fit the full screen.

Native: Turns off the Advanced AccuBlend feature. The projector displays the current image in its true resolution.

NOTE: While you are displaying an image with higher resolution than the projector's native resolution, even when you are in the Native mode, the image is displayed full screen using the Advanced AccuBlend feature.

Color Temperature

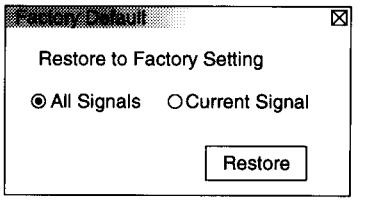
This feature adjusts the color temperature using the slide bar. Move the slide bar to the right to increase the color temperature for a bluish image; to the left to decrease it for a reddish image.

Keystone

This feature corrects the keystone (trapezoidal) distortion to make the top of the screen longer or shorter to be the same as the bottom. Use the ◀ or ▶ buttons on the slide bar to correct the keystone (trapezoidal) distortion.

NOTE: The maximum keystone angle that can be corrected is 15 degrees upward and downward with the projector placed horizontally. However, a picture will be blurred if you correct the keystone angle beyond +12 degrees or more for SXGA signal on MT840.

Factory Default

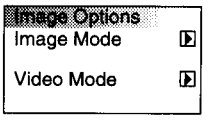


Changes all adjustments and setting to the factory preset for each source individually except Lamp Usage Hours. (To reset the lamp usage time, see "Clear Lamp Hour Meter" on page E-23.

All Data: Reset all the adjustments and settings for all the signals to the factory preset.

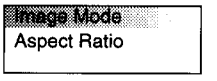
Current Signal: Resets the adjustments for the current signal to the factory preset levels.

Image Options



Provides optional controls such as gamma correction, component signal selection, wide screen and video noise reduction features.

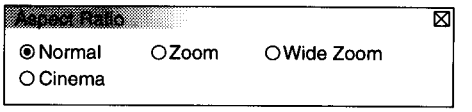
Image Mode



Allows you to select the item you want to adjust.

NOTE: Aspect Ratio is not available for "PC Card Viewer" and "RGB".

Aspect Ratio:



Allows you to choose the best screen size mode to fit on the screen.

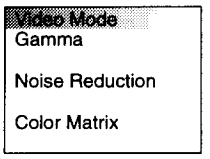
Normal: Displays normal video picture with a 4-to-3 aspect ratio as is.

Zoom: Displays DVD's video picture with a 16-to-9 aspect ratio expanded in the horizontal and vertical direction, maintaining the original proportion.

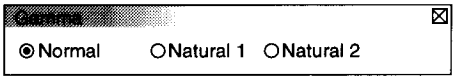
Wide Zoom: Displays DVD's squeezed video picture with a 16-to-9 aspect ratio expanded in the horizontal direction, converted to 4-to-3 aspect ratio.

Cinema: Displays DVD's squeeze video picture with a 16-to-9 aspect ratio compressed in the vertical direction, maintaining the 16-to-9 aspect ratio.

Video Mode



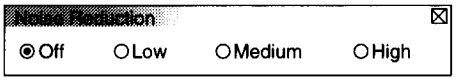
Gamma:



Use the ◀ or ▶ buttons to choose "Normal" when in a lighted room and "Natural 1&2" when in a darkened room. "Natural 1" for better flesh tone; "Natural 2" for true reproduction of middle tones.
Each mode is recommnded for :

Normal: Default for RGB signal (Factory preset)
Natural 1: Default for Video and S-Video signal
Natural 2: Default for component signal

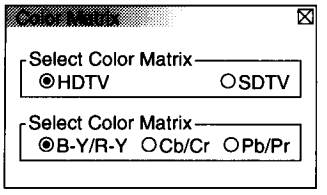
Noise Reduction:



You can select one of the following three levels for reducing video noise to your preference.

***NOTE:** The lower the Noise Reduction level, the better the image quality by way of higher video bandwidth.*

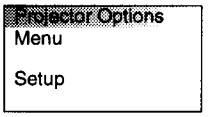
Color Matrix



First select an appropriate color matrix to fit your component signal for HDTV or SDTV. Then select an appropriate matrix type from B-Y/R-Y, Cb/Cr or Pb/Pr.

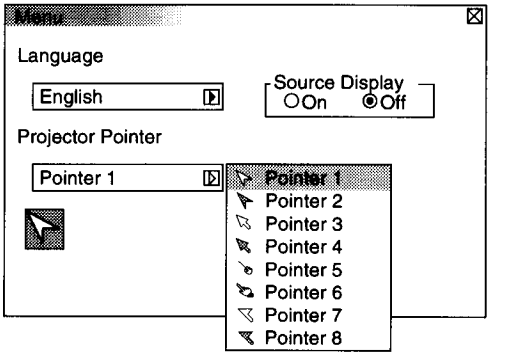
***NOTE:** The Color Matrix feature is available for component video signal only.*

Projector Options



Enables you to set preferences and other operating options.

Menu



Allows you to set preferences for the on-screen menu.

Language:

You can choose one of seven languages for on-screen instructions. The options are: English, German, French, Italian, Spanish, Swedish and Japanese.

Projector Pointer:

This enables you to select from eight different Pointer icons for the "Pointer" button on your remote control.
After moving your Pointer icon to the area you want on the screen, press the Magnify button on the remote control to enlarge the selected area on the screen.

***NOTE:** There may be cases where the Pointer function is not available for a non-interlace signal at 15kHz such as video game.*

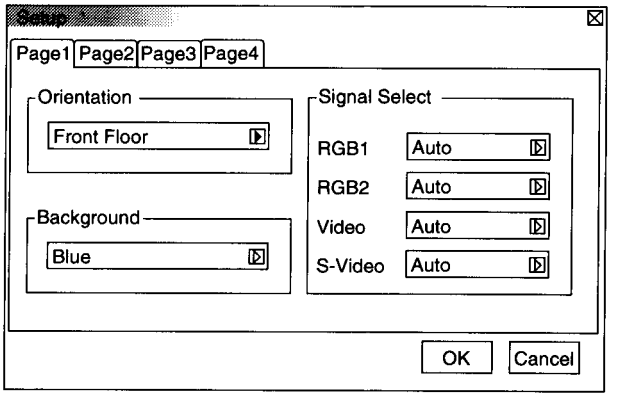
Source Display:

You can turn on and off the information for input name such as VIDEO and RGB.
When this option is on, the current input will be displayed each time you switch sources or turn on the projector.

Setup

Enables you to set operating options.
Press "OK" to save your changes for all the features of Page1, Page2, Page3 and Page4.

[Page1]



Orientation:
This reorients your image for your type of projection.
The options are:front floor projection, rear ceiling projection, rear floor projection, and front ceiling projection.

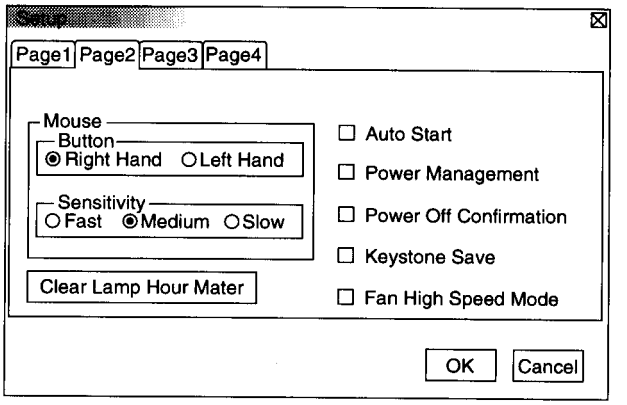
Background:
Use this feature to display a black, blue screen or logo when no signal is available.

> ***Transferring a logo from your PC***
> *You can transfer your background logo from your PC to the projector. To proceed as follows:*
> *1) Install the PC Control Utility 1.0 on your PC from the supplied CD-ROM. See page E-27 for installation.*
> *2) Connect the PC CONTROL port of the projector with the serial port of your PC with the supplied serial cable and then turn on the projector.*
> *3) Start the PC Control Utility on your PC.*
> *4) Click "Logo Transfer" button.*
> *For more detailed information, see Readme.txt file included on the supplied CD-ROM.*
>
> ***NOTE:** File size must be 64KB or less. JPEG and BMP images are available only.*

Signal Select:
<RGB1, 2>
Allows you to choose "RGB 1 or 2" for an RGB 1 or 2 source such as a computer, or "Component" for a component video source such as a DVD player. Normally select "Auto" and the projector automatically detects a component signal. However there may be some component signals that the projector is unable to detect. If this is the case, select "Component".

<Video &S-Video System Select>
This feature enables you to select composite video standards manually. Normally select "Auto".
When you select the video standard for Video and S-Video separately, first select the radio button and then select the video standard from the pull-down menu.
This must be done for Video and S-Video respectively.

[Page2]



Auto Start:
Turns the projector on automatically when the power cable is inserted into an active power outlet. This eliminates the need to always use the "Power" button on the remote control or projector cabinet.

Power Management:
When this option is on and there is no RGB input for five minutes or more, the projector will automatically turn itself off.

Power Off Confirmation:
This option determines whether a confirmation dialog for turning off the projector will appear or not.

***NOTE:** When the confirmation message is displayed, you must be in the Projector mode to operate your projector using the remote control. If not, press the Computer/Projector Select button to change your projector to the Projector mode. The button lights to indicate that you are in the Projector mode.*

Mouse Settings:
This option lets you to change your USB mouse settings. The mouse settings feature is available for USB mouse only. Choose the settings you want:

Mouse Button: "Right Hand" or "Left Hand"
Mouse Sensitivity: "Fast", "Medium" or "Slow"

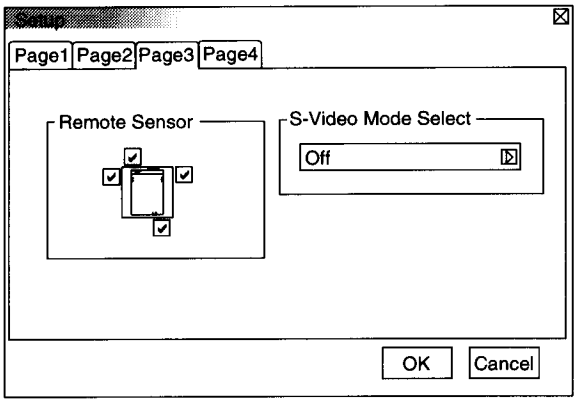
Keystone Save:
This option enables you to save your current keystone settings. Saving your change once affects all sources. The changes are saved when you turn off the projector.

Fan High Speed Mode:
This option allows you to select two modes for fan speed: high-speed mode and normal speed mode.
When you wish to cool down the temperature inside the projector quickly, check this box. This is convenient especially when the projector is installed on the ceiling.

Clear Lamp Hour Meter:
Resets the lamp clock back to zero. Pressing this button appears the "Clear Lamp Usage ?" confirmation dialog box. To reset the lamp usage hour, press "OK".

***NOTE:** The projector will turn off and go into standby mode after 2100 hours (1600 hours for MT1045) of service. If this happens, press the "Help" button on the remote control for ten seconds to reset the lamp clock back to zero. Do this only after replacing the lamp.*

[Page 3]



Remote Sensor

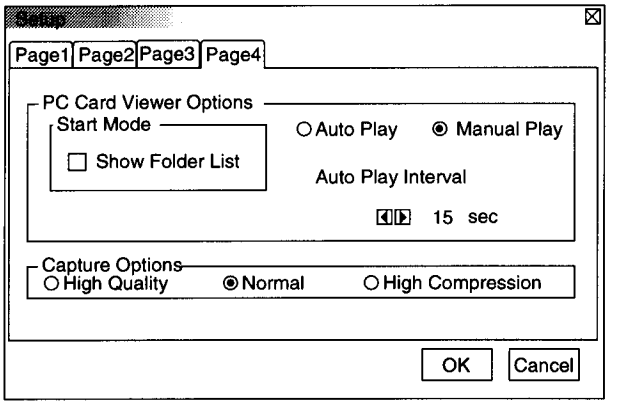
This option determines which remote sensors on the projector are effective in wireless mode.
The options are: front, rear, right, or left. Checked sides show that they can accept the infrared signal from the supplied remote control.

S-Video Mode Select:

This feature is used to select the S-Video signal detection mode. This allows identifying of the S-Video signals with different aspect ratio (Zoom signal 16:9, Wide Zoom signal 4:3).

S1 ..... Identifies a Zoom signal only.
S2 ..... Identifies Zoom or Wide Zoom signal.
OFF ..... Does not identify any S-video signal.

[Page 4]



PC Card Viewer Options

Start Mode

Sets the starting condition when PC Viewer input is selected on the projector.

Show Folder List

When PC Card input is selected on the projector, the folder lists will be displayed and allows you to select the presentation from the PC Card.

Auto Play

If this option is checked, any given slide will start to play automatically. You can specify interval time between 5 and 300 seconds.

NOTE: The Auto Play Interval time set on the PC Control Utility overrides the one set here.

Manual Play

Views a slide manually when PC Card Viewer input is selected.

NOTE: The Auto Play and Manual Play options determine the behavior of the Play/Stop [▶ / ■] icon on the Viewer tool bar.

When selecting "Show Folder List" or "Manual Play" while the "Auto Play" feature is not checked, and you select PC Card Viewer for the input source, you can manually advance to the next slide or the preivious slide.

NOTE: If you check "Auto Play" and select "PC Card Viewer" on the projector, the slides will automatically start to play back from any given slide.

Capture Options (available for JPEG only)

You have three options for JPEG compression quality: High quality, Normal and High Compression.

High Quality

Gives quality of JPEG a priority.

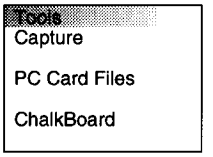
Normal

Gives normal JPEG quality.

High Compression

Gives compression a priority.

Tools



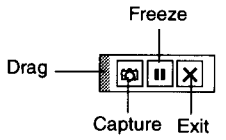
Provides tools for capturing images, displaying files in a PC Card and drawing.

NOTE: The "Tools" feature is required for a PC card.

Capture

Allows you to capture an image from a source that is currently being displayed. The image is saved as JPEG in the PC card. When you select Capture from the menu, you will get a tool bar. You can capture an image directly using the tool bar when the menu is not displayed.

The tool bar includes the following buttons:



Drag: Drags to move the tool bar. (for USB mouse operation only)

Get: Captures an image and save it as a JPEG file in a PC card.

Freeze: Freezes and unfreezes images.

Exit: Exits the Capture function.

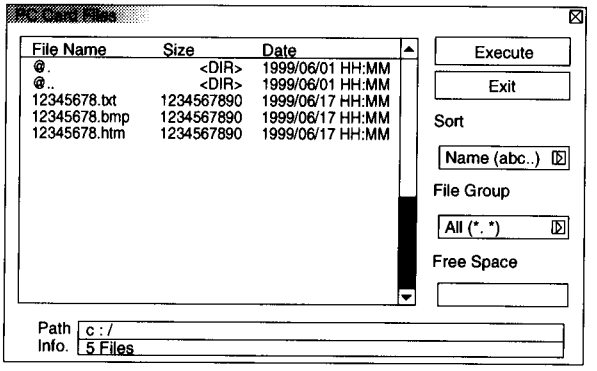
Unless a PC card is inserted into the PC Card Access slot of the projector, "No Card" is displayed. This means that the Capture feature is not available.
The "Card Error" display means that the free space of the PC card is insufficient for saving images. Make more space available on the card by erasing unwanted images with your PC. The number of images that can be captured depends on the size of the PC card.

NOTE: Be sure not to turn off the power or remove the PC card while capturing an image. Doing so could cause a loss of the data in the PC card or damage to the card itself.

NOTE: Captured images with higher resolution than the projector's native resolution cannot be displayed correctly.

PC Card Files

Displays a list of all the files stored in the PC card so that you can select a file you want to display. You can also sort files by file name or date, or display the file.
Although a list of all the files in the PC card is displayed, you can view files in text, HTML, JPEG and BMP format only.



Selecting "Execute" displays the file you selected.

ChalkBoard (available only when using with USB mouse)

Provides the tool bar for producing freehand drawings.

Pen: Left-click and drag to draw. Right-click to display the pen palette containing four lines of different thickness from which you can select a line you prefer by left-clicking.

Erase: Left-click and drag to erase part of a drawing. Right-click to display the eraser palette containing four eraser of different thickness from which you can select an eraser you prefer by left-clicking.

Clear: Clears the drawing completely from the ChalkBoard screen.

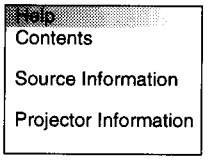
Color: Selects a color. Left-click to display the color palette from which you can select a color you prefer by left-clicking.

View: Hides the tool bar by left-clicking. Right-clicking anywhere on the screen displays the ChalkBoard tool bar again.

Exit: Clears the complete drawing and exits the ChalkBoard.

NOTE:
** The ChalkBoard feature is available only when a USB mouse is used. Freehand drawings cannot be saved or captured.*
** The main menu is not available while you display the ChalkBoard screen.*
** The Capture and the Source Display function are not available on ChalkBoard screen.*
** Switching slides clears a drawing completely.*
** Selecting BMP and JPEG files automatically switches to the PC Card Viewer source.*

Help



Contents

Provides an online help about how to use the menus. An undelined link means that you can move to an adjustment item directly. Selecting the underlined link and pressing ENTER moves to the corresponding adjustment item.

Source Information

Displays the status of the current signal. This dialog box has three pages.

Projector Information

Displays the lamp usage hours.

Using the PC Card Viewer function

NOTE:
When using the supplied software (CD-ROM)
The software is designed to use with a personal computer only. Do not play the software on CD player. Doing so could cause damage to speakers.

Features

The Viewer feature allows slides stored on a PC card to be displayed on the projector. Even if no computer is available, presentations can be conducted simply with the projector. This feature is convenient for holding presentations at meetings and in offices, as well as for playing images taken on digital cameras.

Easy to use

- Presentations can be started immediately simply by inserting a PC card (not supplied)
- Easy slide switching
- Remote control operation
- Jumping to list of slides or any specific slide

High quality images

- High resolution up to 1024×768 dots(MT840: up to 800×600 dots)
- 24-bit full color playback
- Viewing of digital camera images

Simpl utility software (for computer)

- PC Card Viewer software operable on Windows 95/NT
- Slides can be created by capturing the currently displayed image
- Control screen for displaying lists of slides and editing
- Automatic slide conversion of files created with Microsoft PowerPoint 95 and 97

* Microsoft, Windows and PowerPoint are registered trademarks of Microsoft Corporation.

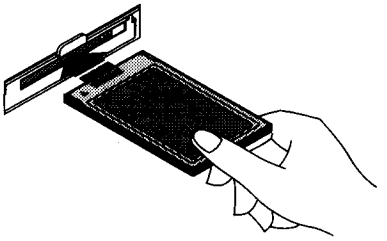
Inserting and Ejecting the PC Card

The PC card is used to view presentation data prepared on the computer and to capture and play images projected with the projector.

Inserting the PC Card

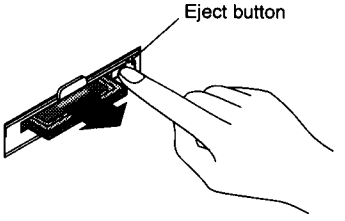
- Hold the PC card horizontally and insert it slowly into card slot with its top facing up.
- The eject button pops out once the PC card is fully inserted. Check that the PC card is fully inserted.

NOTE: Do not try to force the PC card into the slot.



Ejecting the PC Card

Press the eject button. The PC card pops out a little. Grasp the edges of the PC card and pull it out. Do not eject the PC card while its data is being accessed.



Direction for Inserting the PC Card
The PC card has a top and bottom and must be inserted into the PC card slot in a specific direction. It cannot be inserted backwards or upside-down. Attempting to force it into the slot in the wrong direction may break the internal pin and damage the card slot. Refer to the PC card's operating instructions for the proper direction of insertion.

PC Card Type

The PC Card Access slot accepts PCMCIA Type II.

Installing the PC Card Viewer Software

Before Installing

Perform the following before installing the PC Card Viewer software:

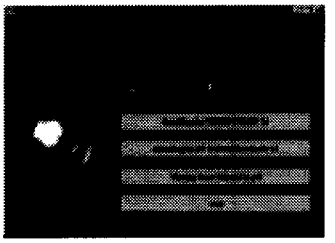
- If Windows95 is already started, exit all applications. Installation may not be performed properly if any applications are running.

Installation

Install the viewer software as described below.
To quit installation before it is completed, press the "Cancel" button then follow the instructions in the dialog box.

1. Start up Windows95.

2. Insert the CD-ROM into the CD-ROM drive.
   The auto CD play function automatically starts the CD-ROM's program and the contents screen appears.



   * The auto CD play function operates if the "Auto insert notification" box in the computer's CD-ROM control panel is checked. (The box is checked by default.)

3. Click [Installing the PC Card Viewer Utility 1.0]
   The setup dialog appears.

   * Follow the instructions in the setup dialog to complete the installation.

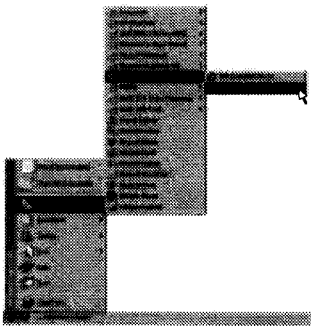
For instructions on uninstalling the PC Card Viewer software, see page E-31.

Starting Up the PC Card Viewer Software on your PC

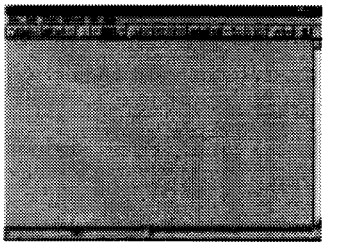
(PC Card Viewer Utility 1.0)

Use the PC Card Viewer Utility 1.0 for creating viewer slides.
To start the PC Card Viewer software:

* Select [Start]-[Programs]-[NEC PROJECTOR TOOLS]-[PC Card Viewer Utility 1.0].



Refer to online help for instructions on using the PC Card Viewer software.



Contents of the English version PC Card Viewer software (PC Card Viewer Utility 1.0)

This is the software used for creating PC Card Viewer slides. In this manual it is referred to as the "PC Card Viewer software".

PC CARD VIEWER PPT CONVERTER 3.0

This is an application that converts files created with Microsoft PowerPoint 95 or 97 into indexes so that they can be played directly with the PC Card Viewer Utility 1.0.
PC Card Viewer PPT Converter is installed automatically when you install the PC Card Viewer Utility.
To start PC Card Viewer PPT Converter:

* Select PC Card Viewer PPT Converter from NEC PROJECTOR TOOLS.

Basic Operation of the PC Card Viewer Software

PC Card Viewer Utility is an application for editing documents, converting them into slides and storing them on PC cards as playback data (indexes) for presentations using projectors.

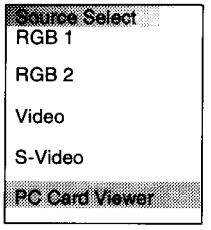
Operating the PC Card Viewer Function from the Projector (playback)

This section describes the operation for showing slides of presentation documents created using the PC Card Viewer function with the projector.
It is also possible to make slides directly from the images projected with the projector.

Projecting slides

1. Insert a PC card into the card slot.
   Insert the PC card with the side with the insertion direction arrow on the top.
   * Press the eject button to eject the card.

2. Select the "PC Card Viewer" from the input menu.
   1) Press the MENU button to display the main menu, use the ▲ and ▼ buttons to select the Source Select, then press the ▶ button to display the source menu.
   2) Select the "Viewer" using the ▲ and ▼ buttons.

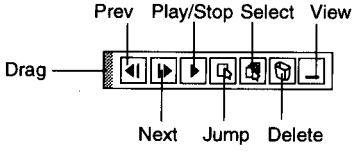


3. Projector slides.

Checking "**Show Folder List**" means that selecting PC Card Viewer input displays a list of the folders in the PC card and if "**Auto Play**" is checked the projector automatically starts to play slides at the first slide of the folder you have selected.
When selecting "**Show Folder List**" or "**Manual Play**" while the "**Auto Play**" feature is not checked, and you select PC Card Viewer for the input source, you can manually advance to the next slide or the preivious slide. See page E-24 for more details.

A tool bar will appear when you press the MENU button on the remote control or the projector cabinet or clicking with the right button of a mouse.

NOTE:To use the tool bar, press the Computer/Projector Select button so that you can be in the Projector mode and the button can light in red.



The tool bar includes the following buttons:

Drag: Drags to move the tool bar. This is available for USB mouse operation only.

Prev: Returns to the previous slide or folder. Or this lets you play slides back in reverse.

Next: Advances to the next slide or folder. Or this lets you play slides back.

Play: Play/Stop: Plays back automatically or manually depending on the setting on PC Card Viewer Options of the menu. This allows you to stop Auto Play while you are playing back and to resume playing from the selected slide or folder when "Auto Play" is selected. This allows you to move on to the next slide when "Manual Play" is selected.

Jump: Displays a list of slides while you are playing back.

Select: Displays a list of folders while you are playing back.

Delete: Deletes a captured slide(s) or all the captured slides in the Capture – specific folder.

View: Hides the tool bar while you are playing back. Pressing the MENU button or clicking with the right button of a mouse shows it again.

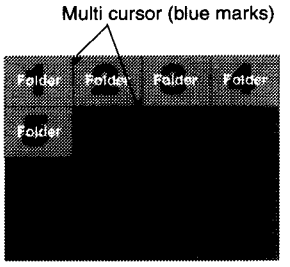
NOTE:
* *The tool bar for PC Card Viewer is not available if you display the ChalkBoard and the Capture tools, and Main menu using the remote control.*
  When using a USB mouse you can display the ChalkBoard tool bar, the Capture tool bar and Main menu as well as the PC Card Viewer tool bar.
* *The tool bar is operated with buttons on the remote control, cabinet, and USB mouse.*

If no memory card is inserted in the PC CARD ACCESS slot, there is no signal, and a black, blue or logo background is displayed, depending on the setting.

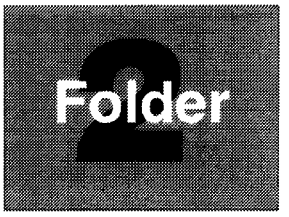
Playback is stopped when ◀ or ▶ on the remote control or the cabinet is pressed in Auto Play mode.

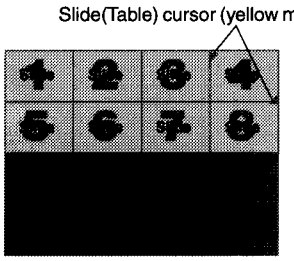
NOTE: Up to 12 indexes can be displayed on the list of folders. The folder in the right bottom is always a folder exclusively for captured images, but is only displayed when images have been captured. To display the list of folders when there are 13 or more indexes stored on the PC card, select "Edit index" from the PC Card Viewer software's "File" menu and move the index you want to display to within 12 indexes from the top of the folder index. For details on indexes, refer to the PC Card Viewer software's help folder.

When the tool bar is not displayed:

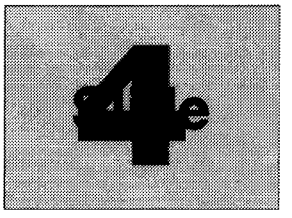


When the tool bar is not displayed, use the ◀ or ▶ button to advance to the next folder or return to the previous folder.





When the tool bar is not displayed, use the ◀ or ▶ button to advance to the next slide or return to the previous slide.



NOTE: To use the ◀ or ▶ button to advance to the next slide or folder, or return to the previous slide or folder, you must be in the Projector mode.
To be in the Projector mode, press the Computer/Projector Select button and the button lights in red.

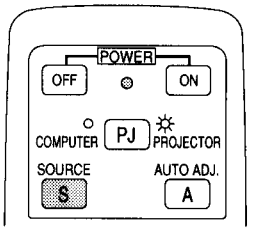
Auto Play Mode

- If the "Auto Play" option is selected in "PC Card Viewer Options" of the menu, any given slide will start to play automatically. You can also specify Auto Play Interval between 5 and 300 seconds.

Switching to Slides Directly from Other Input Modes

With this function it is possible to switch directly to a slide when the picture of a VCR or computer is being projected.
Example:
When conducting presentations using a combination of slides and moving pictures from a VCR, etc., it is possible to switch from a PC Card Viewer slide to the video picture then back to the PC Card Viewer slide simply by using the Source button.

NOTE: Even if you switch the current PC Card Viewer source to another source, the current slide is retained. When you return back to the PC Card Viewer, you will get the slide that has been retained.



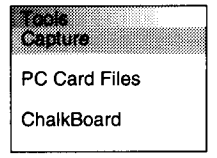
NOTE: The PC card editing operation cannot be performed from the projector. Do so using the PC Card Viewer software.

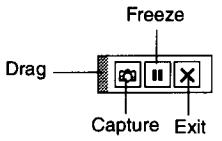
Capturing Images Displayed on the Projector

Storing images displayed on the projector on the PC card

Preparations:
Insert the PC card into the card slot.
Insert the PC card with the side with the insertion direction arrow on the top.
* Press the eject button to eject the card.

1. Project the image you wish to store on the projector.
2. Select the "Capture" from the Tools menu.





3. A tool bar will appear.

The tool bar includes the following buttons:

Drag: Drags to move the tool bar (for USB mouse operation only).

Capture: Captures an image and save it as a JPEG file in a PC card.

Freeze: Freezes and unfreezes images.

Exit: Exits the Capture function. Another option to exit the Capture function is to press MENU or CANCEL button on the remote control or projector cabinet.

* The tool bar for Capture is not available if you display the ChalkBoard and the PC Card Viewer tools, and Main menu using the remote control.
When using a USB mouse you can display the ChalkBoard and the PC Card Viewer tools, and Main menu as well as the Capture tool bar.

NOTE: You can compress a captured file (JPEG) using the Capture Options in the Setup dialog. See page E-24.

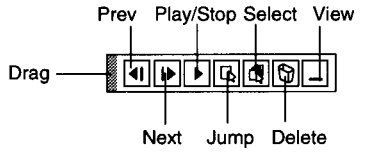
NOTE: Captured images with higher resolution than the projector's native resolution cannot be displayed correctly.

NOTE:
- *File size of the captured image varies depending on the resolution of an input signal.*
- *Since an image data is compressed with the JPEG format, the image is slightly degraded.*

NOTE: An hourglass indicating that an image is being captured appears on the projector's display. Do not eject the PC card or turn off the projector's power while this icon is displayed. Doing so will damage the PC card data.
If the PC card data is damaged, use a computer to repair the data.

NOTE: The folder in the right bottom is always a folder exclusively for captured images. To display the list of folders when there are 13 or more indexes stored on the PC card, select "Edit index" from the PC Card Viewer software's "File" menu and move the index you want to display to within 12 indexes from the top of the folder index. For details on indexes, refer to the PC Card Viewer software's help file.

Deleting Captured Images



Using the Delete button on the tool bar for PC Card Viewer can delete captured images.
To delete captured images:
1) Select PC Card Viewer.
2) Use ▶ button to select the Capture folder in the right bottom of the screen.
3) Press the MENU button to display the tool bar.
4) Use the ◀ or ▶ button to select the Delete icon and press the ENTER button or click with a mouse button.

Viewing Digital Images

Digital images can be played with the PC Card Viewer if the following conditions are met:

- If the image can be stored on an MS-DOS format PC card
- If the image can be stored in a format supported by the PC Card Viewer.
  With the PC Card Viewer, images on the card are searched for in directories and images in JPEG or BMP format are recognized as slides.
  Searchable directories are directories within two steps from the root directory, and searchable images are images within the first 12 files in the directory. Only file and slide switching are possible.

NOTE: The maximum number of images recognized as slides within one directory is 128.

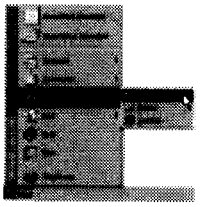
Uninstalling the PC Card Viewer Software

Even if you do now know the PC Card Viewer software's file names or where they are stored, the PC Card Viewer software files can be easily removed from the system using the "Install/Uninstall Applications" control panel in Windows 95. (Normally there is no need to perform this operation.)

Uninstalling the software

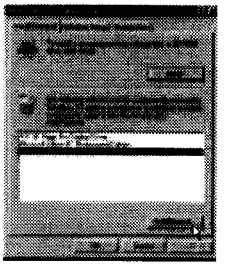
Use the procedure described below to uninstall the PC Card Viewer software files.

1. From the "Start" menu, select "Settings" then "Control Panels".



2. In the "Control Panels" dialog box, double-click on "Add/Remove Programs".

3. In the "Add/Remove Programs Properties" dialog box, click the "Setup/Remove" tab, then select "PC Card Viewer Utility 1.0" from the list of applications and click on "Add/Remove".



4. In the "Confirm File Deletion" dialog box, click "Yes".

5. Once the application is uninstalled, click on "OK" in the "Remove Program From Your Computer" dialog box.

Terminology

PC card	This is the name of a card currently being standardized by the Japan Electronic Industry Association (JEIDA) and PCMCIA (Personal Computer Memory Card Interface Association) of the United States.
TYPE (I, II and III)	PCMCIA 2.1 PC cards are divided into three types according to their thickness: Type I (3.3 mm), Type II (5.0 mm) and Type III (10.5 mm).
BMP	A type of image format. The standard Windows Bit Map format used for MS-DOS/Windows-compatible computers.
JPEG	A type of image format. "JPEG" is the abbreviation of Joint Photographic Experts Group. JPEG compression offers efficient data storage. The data not required for displaying the image is identified and deleted. Since the data is deleted, JPEG algorithms are said to be irreversible. This means that once the image is compressed, the decompressed image it is not the same as the original image.

4. MAINTENANCE

This section describes the simple maintenance procedures you should follow to replace the lamp, clean the filter, and replace the batteries in the remote control.

Replacing the Lamp

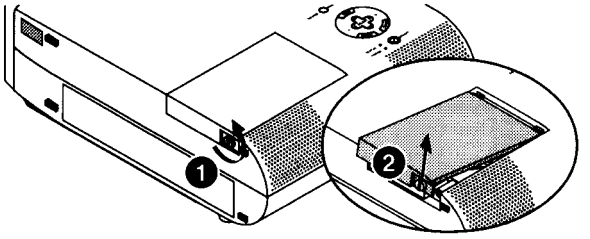
After your lamp has been operating for 2000 hours (1500 hours : MT1045) or longer, the "Status" light in the cabinet will go on and the message will appear. Even though the lamp may still be working, replace it at 2000 (1500 hours : MT1045) hours to maintain optimal projector performance.

CAUTION

- DO NOT TOUCH THE LAMP immediately after it has been used. It will be extremely hot. Turn the projector off, wait a full minute, and then disconnect the power cable. Allow at least one hour for the lamp to cool before handling.
- DO NOT REMOVE ANY SCREWS except the lamp cover screw and three lamp case screws. You could receive an electric shock.
- The projector will turn off and go into stand by mode after 2100 (1600 hours : MT1045) hours of service. If this happens, be sure to replace the lamp. If you continue to use the lamp after 2000 hours (1500 hours : MT1045) of use, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury. If this happens, contact your NEC dealer for lamp replacement.

To replace the lamp:

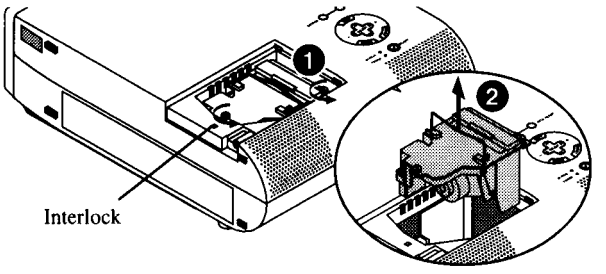
1. Loosen the lamp cover screw until the screwdriver goes into a freewheeling condition and remove the lamp cover. The lamp cover screw is not removable.



2. Loosen the two screws securing the lamp housing until the screwdriver goes into a freewheeling condition. The three screws are not removable.

   Remove the lamp housing by pulling out the handle.

   NOTE: There is an interlock on this case to prevent the risk of electrical shock. Do not attempt to circumvent this interlock.

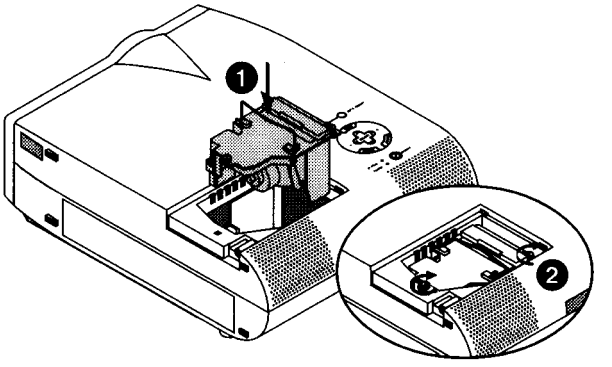


3. Insert a new lamp housing until the lamp housing is plugged into the socket.

   CAUTION: Do not use a lamp other than the NEC replacement lamp (MT40LP).
   Order this from your NEC dealer.

   Secure it in place with the two screws.

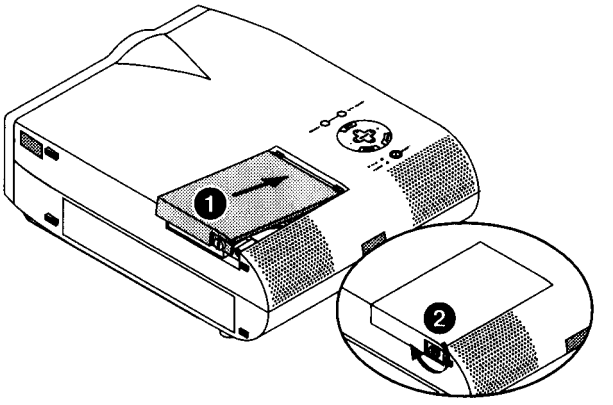
   Be sure to tighten the screws.



4. Reattach the lamp cover.

   Tighten the lamp cover screw.

   Be sure to tighten the screw.

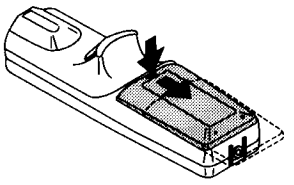


5. After you install a new lamp, select [Main Menu] → [Projector Options] → [Setup]→[Page 2]→[Clear Lamp Hour Meter] to reset the lamp usage hours.

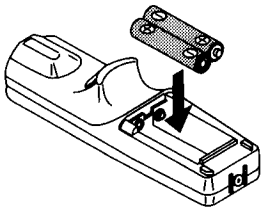
NOTE: When the lamp exceeds 2100 hours (1600 hours : MT1045) of service, the projector cannot turn on and the message is not displayed. If this happens, press the OFF or Help button on the remote control for a minimum of 10 seconds while in standby mode. When the lamp time clock is reset to zero, the STATUS indicator goes out.

Remote Control Battery Installation

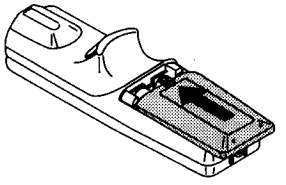
1. Press firmly and slide the battery cover off.



2. Remove both old batteries and install new ones (AA). Ensure that you have the batteries' polarity (+/–) aligned correctly.



3. Slip the cover back over the batteries until it snaps into place.



Cleaning or Replacing the Filters

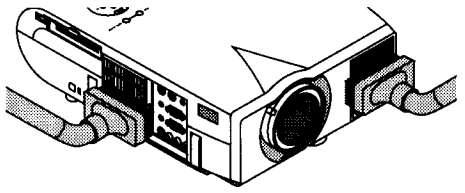
The air-filter sponge keeps the inside of the MultiSync MT840/ MT1040/MT1045 Projector free from dust or dirt and should be cleaned after every 100 hours of operation (more often in dusty conditions). If the filter is dirty or clogged, your projector may overheat.

CAUTION

- Turn off the power and unplug the projector before replacing the filter.
- Only clean the outside of the filter cover with a vacuum cleaner.
- Do not attempt to operate the projector without a filter cover.
- Your projector will not operate unless the filter cover is installed correctly.

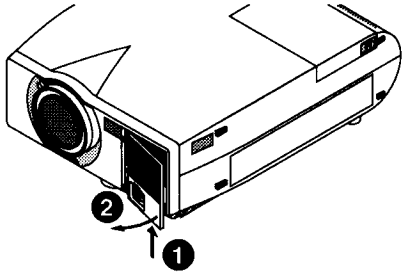
To clean the air-filter:

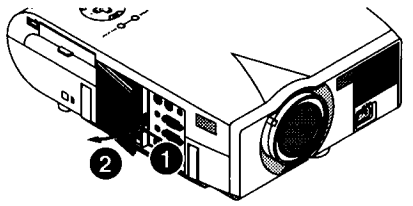
Vacuum the filter-through the filter cover.



To replace the air-filter:

1. Remove the filter cover by pushing up on the catch of the cover until you feel it detach.





2. Reinstall the new filter cover.

NOTE: Do not detach the sponge from the filter cover. Do not wash the filter cover with soap and water. Soap and water will damage the the filter membrane. Before replacing the filter cover, remove dust and dirt from the projector cabinet. Keep out dust and during filter replacement.

5. TROUBLESHOOTING

This section helps you resolve problems you may encounter while setting up or using the projector.

Status Light Messages

Condition	Status
OFF	• Normal
On continually	• The projector lamp has exceeded 2000 hours (1500 hours : MT1045) of operation and should be replaced.
Blinking very rapidly (On and off in a cycle of 1 sec.)	• The lamp cover or filter cover is not fastened properly. Check and reattach it if necessary.
Blinking rapidly (On and off in a cycle of 4 sec)	• The temperature protector has been triggered. If the room temperature is high, move the projector to a cooler location. If the temperature inside the projector is high, check the cooling fan hole on the bottom of the projector. If the hole is blocked, remove whatever is blocking it.
Blinking slowly (On and off in a cycle of 8 sec.)	• The cooling fan has stopped. Contact your NEC dealer for service.
Blinking very slowly (On and off in a cycle of 12 sec.)	• The lamp is not turned on. The projector was turned off and back on too quickly. Turn off the projector, wait one minute, then turn the projector back on. Or the lamp is burnt out.

Common Problems & Solutions

Problem	Check These Items
Does not turn on	• Check that the power cable is plugged in and that the power button on the projector cabinet or the remote control is on. • Ensure that the lamp cover is installed correctly. See page E-33. • Check to see if the projector has overheated or the lamp usage exceeds 2100 hours (1600 hours : MT1045). If there is insufficient ventilation around the projector or if the room where you're presenting is particularly warm, move the projector to a cooler location.
No picture	• Use the menu to select your source (Video, S-Video, RGB or PC Card Viewer). See page E-20. • Ensure your cables are connected properly. • Use menus to adjust the brightness and contrast. See page E-20 • Remove the lens cap. • Reset the settings or adjustments to factory preset levels using the Factory Default in the Adjustment Menu. See page E-21
Image isn't square to the screen	• Reposition the projector to improve its angle to the screen. See page E-12 • Use the Keystone in the Adjustment Menu to correct the trapezoid distortion. See page E-21
Picture is blurred	• Adjust the focus. See page E-12 or E-17. • Reposition the projector to improve its angle to the screen. See page E-12 • Ensure that the distance between the projector and screen is within the adjustment range of the lens. See page E-13
Image is scrolling vertically, horizontally or both	• Use menus or Source button on the remote control or the cabinet to select the source you want to input.
Remote control does not work	• Install new batteries. See page E-34. • Make sure there are no obstacles between you and the projector. • Stand within 22 feet (7 m) of the projector. See page E-34. • Make sure that you are in the Projector mode or the Computer/Projector Select button lights in red. If not, press the Computer/Projector Select button.
Status indicator is lit or blinking	• See the Status Light messages above.
Cross color in RGB mode	• If Auto Adjust is off, turn it on. If Auto Adjust is on, turn it off and balance the image with the Position and Pixel Adjust in the Adjustments Menu. See page E-21.

When using the PC Card Viewer function

Condition	Status
No picture	• Is "PC Card Viewer" selected from the Source menu? • Is the PC memory card seated in the PC CARD ACCESS slot completely? • Are slide data stored in the PC card? • Have the contents of the PC card been destroyed?
Part of a slide is not displayed	• While an image with over 1024 × 768 dots is projected, several lines of information will be lost. Use the supplied software change the image to 1024 × 768 dots in size.
Contents of PC Card are damaged	• Areas of slides exceeding 1024 × 768 (MT840: 800 × 600 dots) cannot be displayed. Use the PC Card Viewer software, etc., to change the image size to 1024 × 768 dots (MT840: 800 × 600 dots). In addition, the displayable image size differs according to the resolution of the projector. Use the PC Card Viewer software, etc., to change the image size. Note that on MT840 JPEG images exceeding 800 × 600 dots are scaled down to three-quarters of its original size. Example: a JPEG image exceeding 1024 × 768 dots is displayed in 768 (=1024 × 3/4) × 576 (=768 × 3/4) dots. • Use a computer, etc., to repair the data.

For more information contact your dealer.

6. SPECIFICATIONS

This section provides technical information about the MultiSync MT840/MT1040/MT1045 Projector's performance.

Model Number **MT840 / MT840G / MT1040 / MT1040G/ MT1045 / MT1045G**

Optical

LCD Panel	1.3" p-Si TFT active-matrix, 800×600 dots (MT840) / 1024×768 dots (MT1040/MT1045)
	1.3" p-Si TFT active-matrix,with Micro Lens Array (MT1045)
Lens	Manual zoom, manual focus
	MT840/MT1040 : F2.3 – 2.7 f=48.6 – 58.4 mm
	MT1045 : F1.8 – 2.2 f=49.3 – 59.3 mm
Lamp	MT840/MT1040 : 180W NSH lamp / MT1045 : 200W NSH lamp
Image Size	30 – 300 inches (762 – 7620 mm) diagonal
Projection Distance	MT840/MT1040 : 4.3 – 36.7 ft (1.3 - 11.2 m)
	MT1045 : 4.3 – 37.1 ft (1.3 - 11.3 m)

Electrical

Inputs	Video (NTSC / PAL / PAL60 / SECAM / NTSC4.43)
	Horizontal Frequency : 15 – 85 kHz (RGB : 24 kHz or over)
	Vertical Frequency : 50 – 85 Hz
Video Bandwidth	RGB: 80 MHz
Color	Reproduction Full color, 16.7 million colors simultaneously.
Horizontal Resolution	550 TV lines : NTSC / PAL / NTSC4.43 / YCbCr
	350 TV lines : SECAM
	RGB MT840 :800 dots horizontal, 600 dots vertical
	MT1040/MT1045 : 1024 dots horizontal, 768 dots vertical
Power Requirement	100 – 120 / 200 – 240 VAC, 50 / 60 Hz
Input Current	3.5 A (100 – 120 VAC) / 1.7A (200 – 240 VAC)

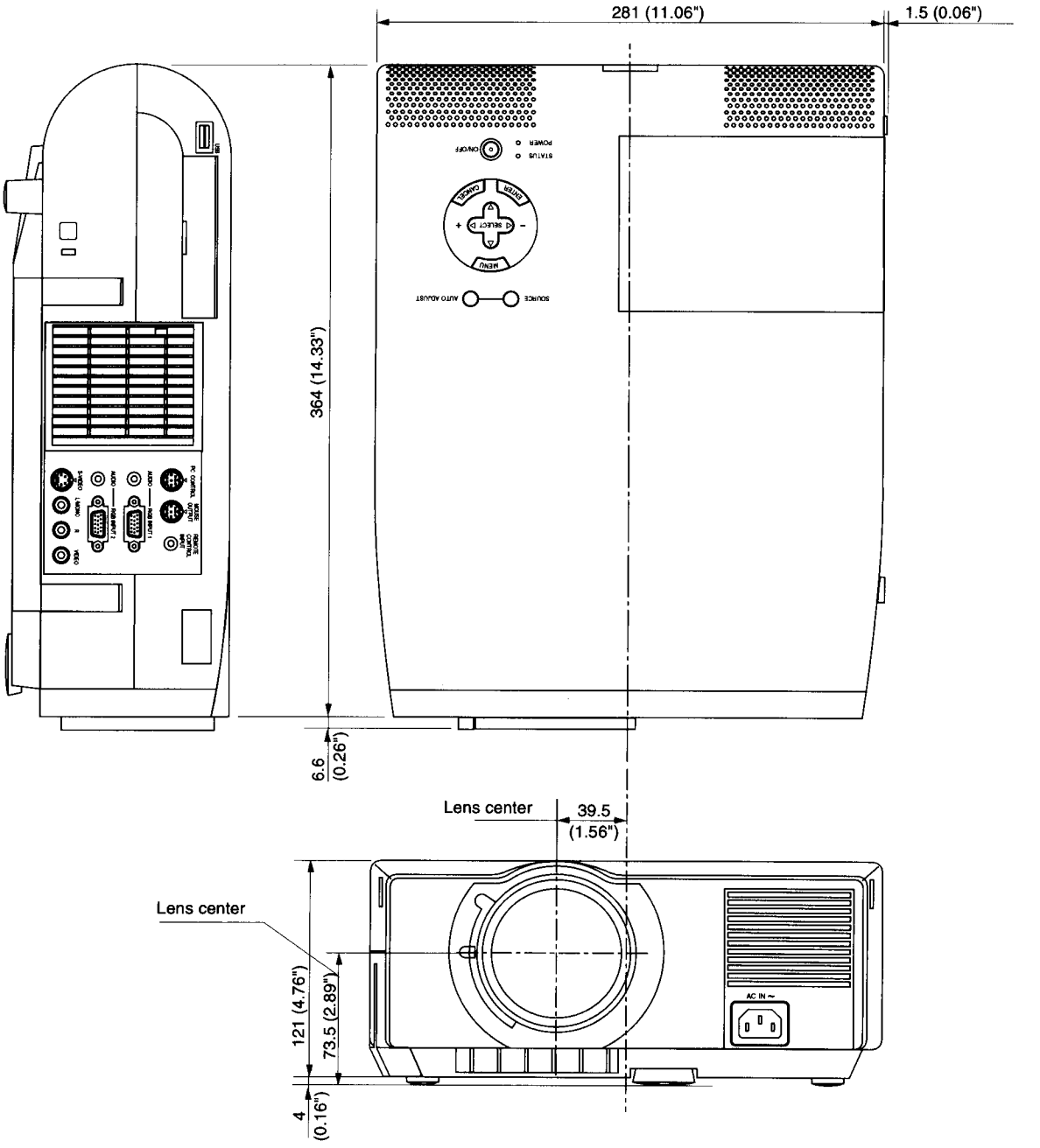
Mechanical

Dimensions	MT840/MT1040 : 11.1" (W)×4.8" (H)×14.3" (D) / 281mm (W)×121mm (H)×364mm (D) (not including lens and feet)
	MT1045 : 11.1" (W)×4.8" (H)×14.9" (D) / 281mm (W)×121mm (H)×376mm (D) (not including lens and feet)
Net Weight	MT840/MT1040 : 12.4 lbs / 5.6 kg
	MT1045 : 12.8 lbs / 5.8 kg
Environmental Considerations	Operational Temperatures: 32° – 104°F (0° to 40°C), 20 – 80% humidity
	Storage Temperatures: 14° – 140°F (-10° to 60°C), 30 – 85% humidity
Regulations	UL Approved (UL 1950, CSA 950)
	Meets DOC Canada requirements
	Meets FCC Class A requirements
	Meets AS/NZS3548
	Meets EMC Directive (EN55022, EN55082-1, EN61000-3-2, EN61000-3-3)
	Meets Low Voltage Directive (EN60950, TUV GS Approved)
	CE

The specifications are subject to change without notice.

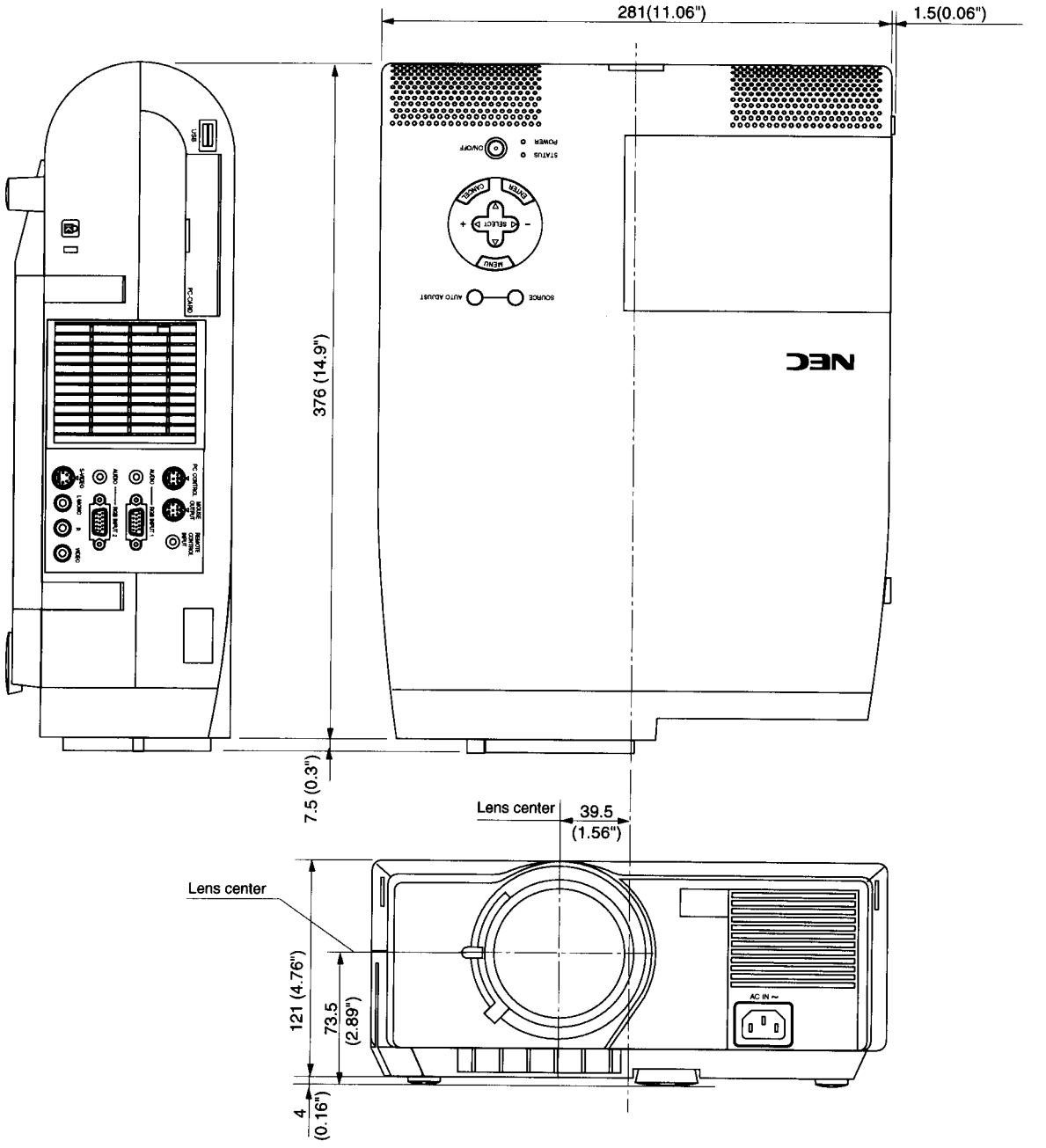
Cabinet Dimensions

MT840/MT1040



Unit = mm (inch)

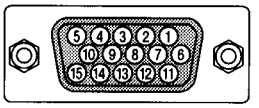
MT1045



Unit = mm (inch)

D-Sub Pin Assignments

Mini D-Sub 15 Pin Connector



Signal Level
Video signal : 0.7Vp-p (Analog)
Sync signal : TTL level

* RGB Input 1 only

Pin No.	RGB Signal (Analog)	YCbCr Signal
1	Red	Cr
2	Green or Sync on Green	Y
3	Blue	Cb
4	Ground	
5	Ground	
6	Red Ground	Cr Ground
7	Green Ground	Y Ground
8	Blue Ground	Cb Ground
9	No Connection	
10	Sync Signal Ground	
11	Ground	
12	Bi-directional DATA (SDA)*	
13	Horizontal Sync or Composite Sync	
14	Vertical Sync	
15	Data Clock*	

Timing Chart

Y / N	Signal	Resolution (Dots)	Refresh Rate (Hz)	Frequency H. (kHz)	Dot Clock (MHz)
Y	NTSC	640 × 480	60	15.734	-
Y	PAL	768 × 576	50	15.625	-
Y	SECAM	768 × 576	50	15.625	-
Y	VESA	640 × 350	85.08	37.86	31.5
Y	MAC	640 × 400	66	35	30.24
Y	IBM	640 × 400	70	31.47	25.175
Y	VESA	640 × 400	85.08	37.86	31.5
Y	VESA	640 × 480	59.94	31.47	25.175
Y	IBM	640 × 480	60	31.47	25.175
Y	MAC	640 × 480	60	31.47	25.175
Y	MAC	640 × 480	66.67	34.97	31.334
Y	MAC	640 × 480	66.67	35	30.24
Y	VESA	640 × 480	72.81	37.86	31.5
Y	VESA	640 × 480	75	37.5	31.5
Y	IBM	640 × 480	75	39.375	31.49
Y	VESA	640 × 480	85.01	43.269	36
Y	IBM	720 × 350	70.09	31.469	28.322
Y	VESA	720 × 400	85.04	37.927	35.5
Y	IBM	720 × 350	87.85	39.44	35.5
Y	IBM	720 × 400	87.7	39.375	35.5
Y	VESA	800 × 600	56.25	35.16	36
Y	VESA	800 × 600	60.32	37.879	40
Y	VESA	800 × 600	72.19	48.077	50
Y	VESA	800 × 600	75	46.88	49.5
Y	VESA	800 × 600	85.06	53.674	56.25
#Y	MAC	832 × 624	74.55	49.725	57.283
#Y	VESA	1024 × 768	43 Interlaced	35.5	44.9
#Y	VESA	1024 × 768	60	48.363	65
#Y	VESA	1024 × 768	70.07	57.476	75
#Y	IBM	1024 × 768	72.03	58.131	79
#Y	MAC	1024 × 768	74.93	60.241	80
#Y	VESA	1024 × 768	75.03	60.023	78.75
#Y	VESA	1024 × 768	85	68.677	94.5
##Y	VESA	1152 × 864	75	67.5	108
##Y	MAC	1152 × 870	75.06	68.681	100
##Y	SUN	1152 × 900	65.95	61.796	92.94
##Y	SGI	1152 × 900	76.05	71.736	105.6
##Y	VESA	1280 × 960	60	60	108
##Y	SGI	1280 × 1024	60	63.9	107.35
##Y	VESA	1280 × 1024	60.02	63.981	108
##Y	MAC	1280 × 1024	60.38	64.31	107
##Y	MAC	1280 × 1024	69.89	74.882	118.5
##Y	HP	1280 × 1024	72.01	78.125	135
##Y	SUN	1280 × 1024	76.11	81.13	135
##Y	VESA	1280 × 1024	75.03	79.976	135
##Y	VESA	1280 × 1024	85.02	91.146	157.5

#Y: Images in above flagged with # and Y are compressed with Advanced AccuBlend on MT840.
##Y: Images in above flagged with ## and Y are compressed with Advanced AccuBlend on MT1040.

PC Control Codes

Function	Code Data
POWER ON	02H 00H 00H 00H 00H 02H
POWER OFF	02H 01H 00H 00H 00H 03H
INPUT SELECT RGB 1	02H 03H 00H 00H 02H 01H 01H 09H
INPUT SELECT RGB 2	02H 03H 00H 00H 02H 01H 02H 0AH
INPUT SELECT VIDEO	02H 03H 00H 00H 02H 01H 06H 0EH
INPUT SELECT S-VIDEO	02H 03H 00H 00H 02H 01H 0BH 13H
INPUT SELECT PC CARD VIEWER	02H 03H 00H 00H 02H 01H 1FH 27H
PICTURE MUTE ON	02H 10H 00H 00H 00H 12H
PICTURE MUTE OFF	02H 11H 00H 00H 00H 13H
SOUND MUTE ON	02H 12H 00H 00H 00H 14H
SOUND MUTE OFF	02H 13H 00H 00H 00H 15H
ON SCREEN MUTE ON	02H 14H 00H 00H 00H 16H
ON SCREEN MUTE OFF	02H 15H 00H 00H 00H 17H

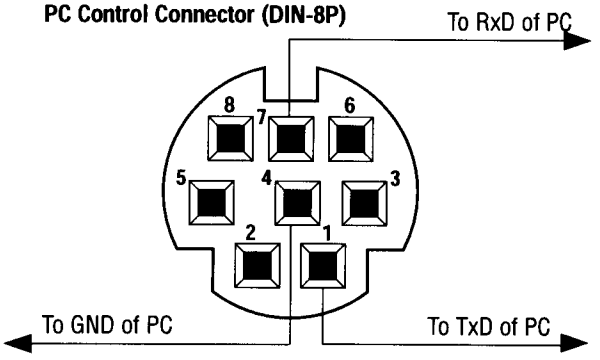
NOTE: Contact your local dealer for a full list of the PC Control Codes if needed.

Cable Connection

Communication Protocol

Baud rate:	**38400 bps**
Data length:	**8 bits**
Parity:	**No parity**
Stop bit:	**One bit**
X on/off:	**None**
Communications procedure:	**Full duplex**

PC Control Connector (DIN-8P)



NOTE: Pins 2, 3, 5, 6 and 8 are used inside the projector.

TROUBLESHOOTING

1. Operational checks

By making checks on operation under normal working conditions, a certain degree of fault diagnosis can be carried out.

Is the POWER indicator lit in orange in the standby state?

NO

- The power cord is disconnected.
- The PS PWB fuse (F1) has blown out.
- The cable (POPM) is disconnected.
- The MAIN PWB fuses (F3001 to F3005) have blown out.
- Failure in CPU peripheral circuit of the MAIN PWB.
- Clogging around the air filter.
- Deviation from working range and temperature-condition range.
- The cable (BM) is disconnected.

YES

Is the POWER indicator lit in green with POWER ON?

NO

- Lamp's life has expired. (The STATUS indicator is lit.)
- Failure in I/O PWB, MAIN PWB.
- The cables (POMI, POXV, POXT, PORX, POGX, POBX) are disconnected.
- The LC panel is out of order.

YES

Is the STATUS indicator flashing?

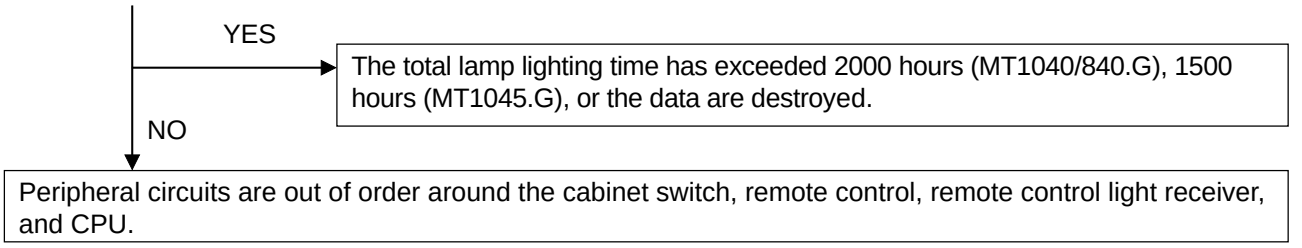
YES

- The lamp fails to light.
  [Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]
- The filter cover or the lamp cover is dislodged.
  [Flashing at the intervals of 1 second (0.5-second ON/0.5-second OFF)]
- The fan is stopped due to the fan being out of order or intrusion of foreign substance
  [Flashing at the intervals of once every 8 seconds (4-second light/4-second OFF)]
- The cable (POLM) is disconnected.
  [Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]
- The cables (POF1, POF2) are disconnected.
  [Flashing at the intervals of once every 8 seconds (4-second ON/4-second OFF)]
- The cables (POFC, POLC, POREM1) are disconnected.
  [Flashing at the intervals of 1 second (0.5-second ON/0.5-second OFF)]
- Peripheral circuits are out of order around PS PWB, BALLAST PWB, and CPU.
- Lamp is out of order.
  [Flashing at the intervals of once every 12 seconds (6-second ON/6-second OFF)]

NO

Is the STATUS indicator lit?

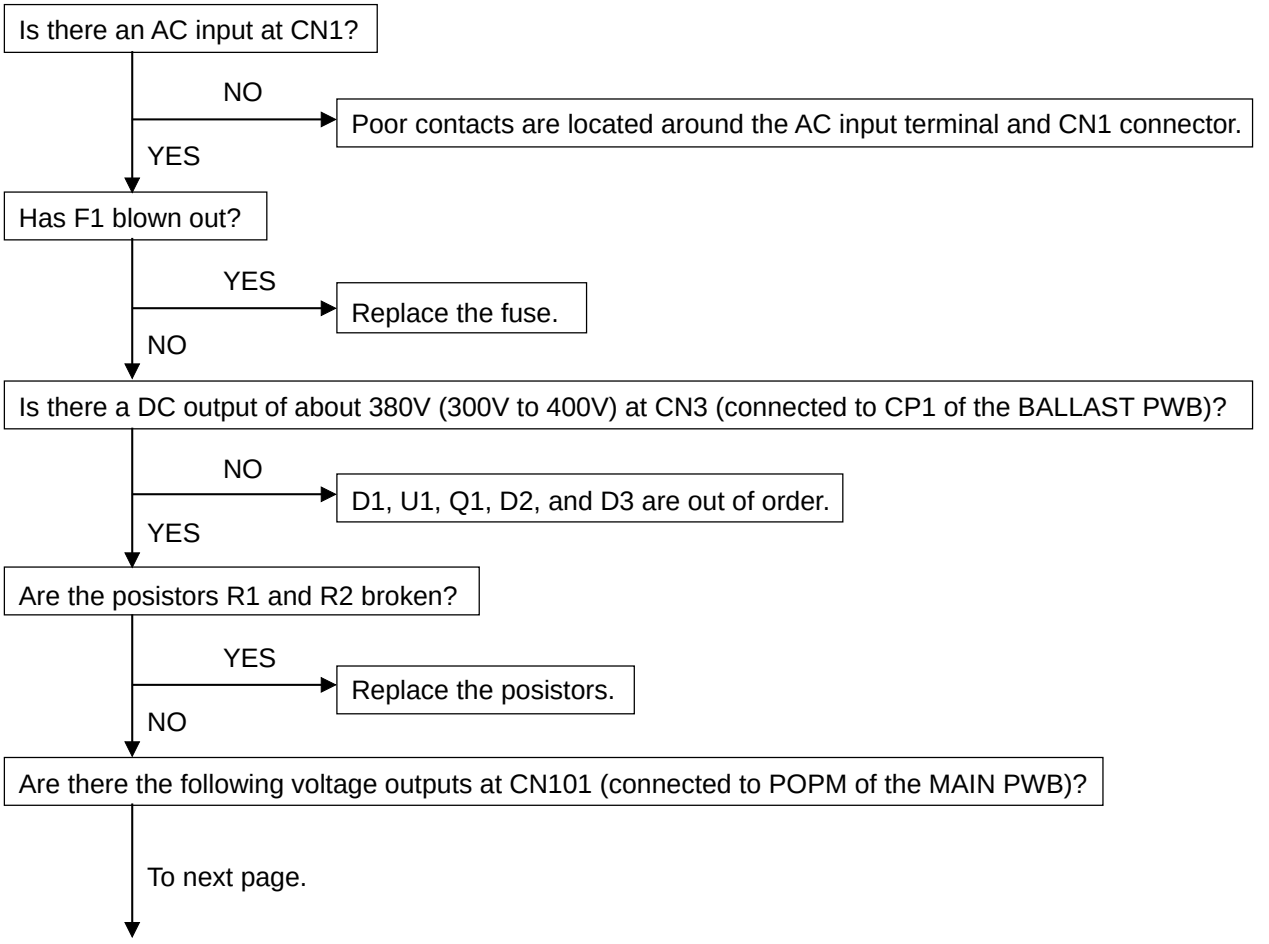
To next page.


YES
The total lamp lighting time has exceeded 2000 hours (MT1040/840.G), 1500 hours (MT1045.G), or the data are destroyed.
NO
Peripheral circuits are out of order around the cabinet switch, remote control, remote control light receiver, and CPU.

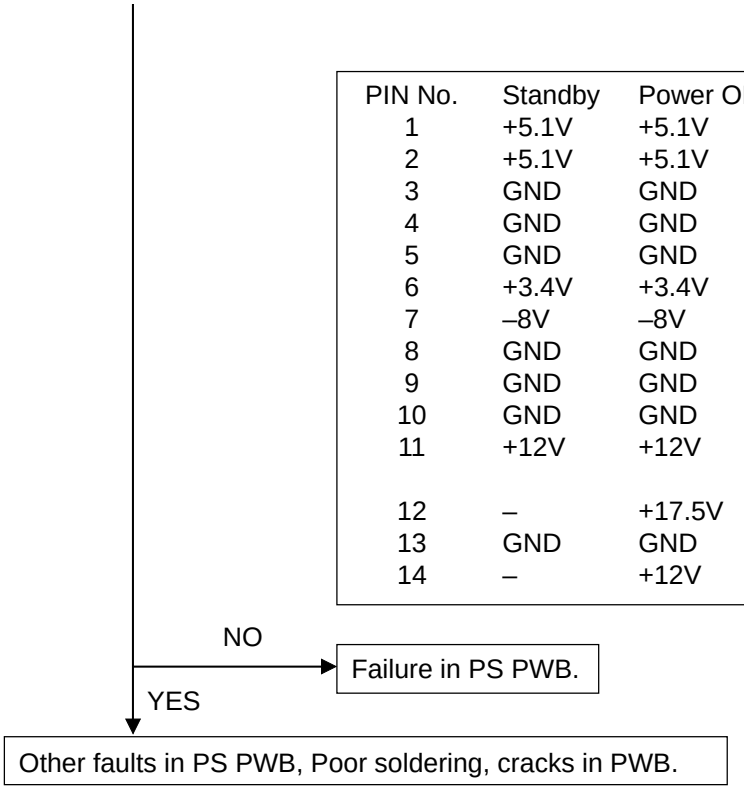
2. POWER block

Problems in POWER and related circuits often cause typical malfunctions, such as no picture presentation, no power supply to each PWB, no lamp lighting, no fan rotation, and so on.
When a problem occurs, check whether it results from trouble in the power supply. Continue to check the PS and the BALLAST in this order.

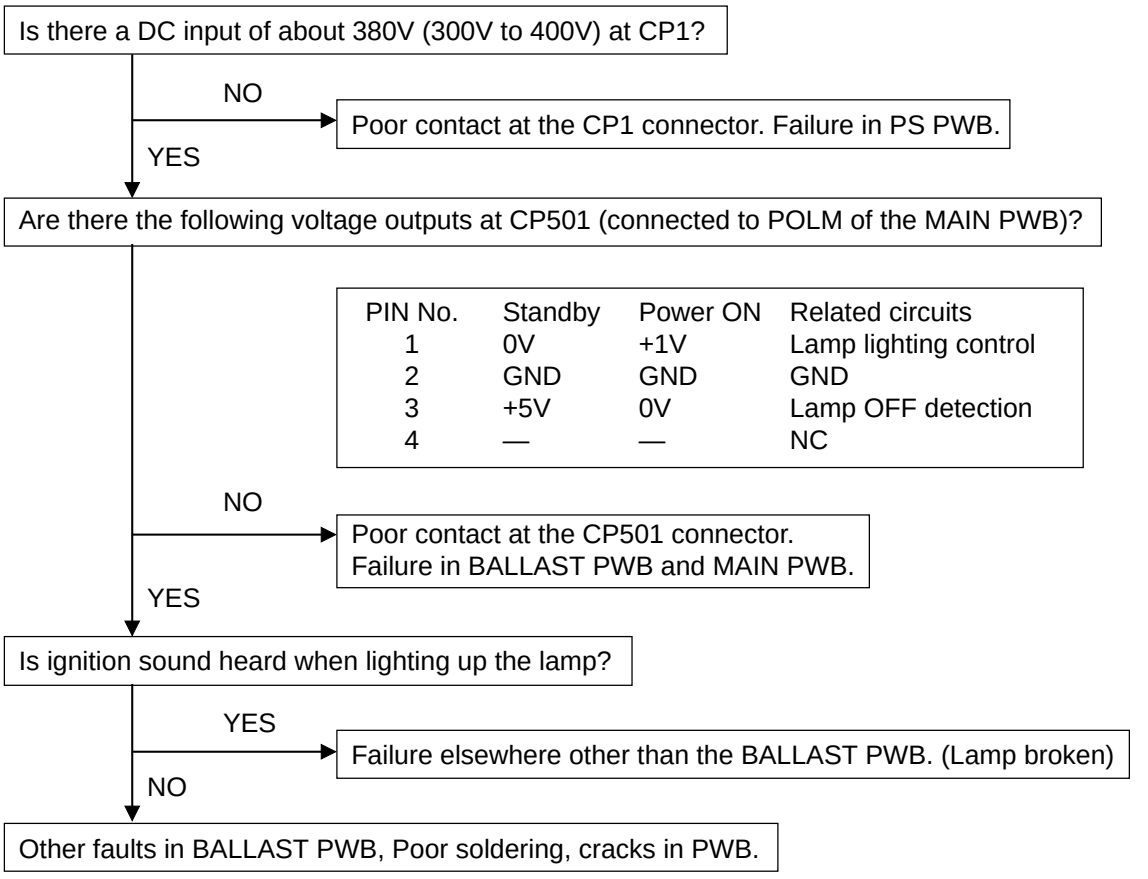
2-1. PS PWB


Is there an AC input at CN1?
NO
Poor contacts are located around the AC input terminal and CN1 connector.
YES
Has F1 blown out?
YES
Replace the fuse.
NO
Is there a DC output of about 380V (300V to 400V) at CN3 (connected to CP1 of the BALLAST PWB)?
NO
D1, U1, Q1, D2, and D3 are out of order.
YES
Are the posistors R1 and R2 broken?
YES
Replace the posistors.
NO
Are there the following voltage outputs at CN101 (connected to POPM of the MAIN PWB)?
To next page.

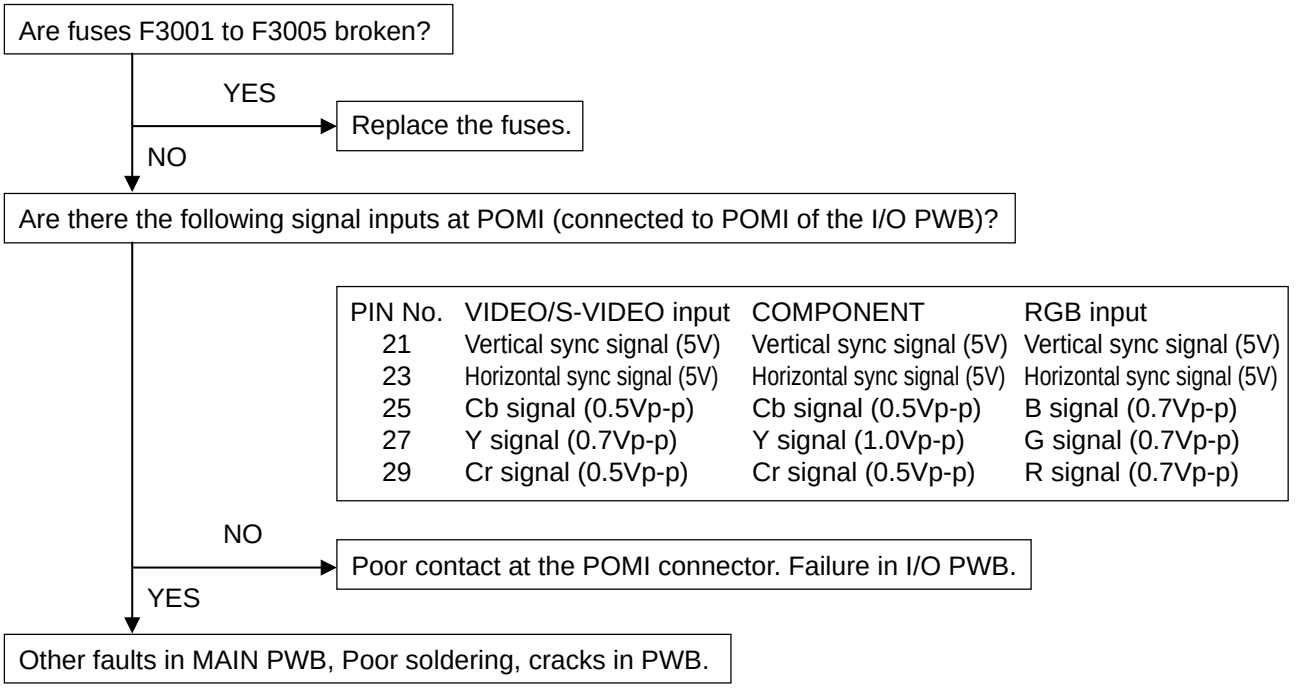
PIN No.	Standby	Power ON	Related circuits
1	+5.1V	+5.1V	BRACE, USB controller
2	+5.1V	+5.1V	BRACE, USB controller
3	GND	GND	GND
4	GND	GND	GND
5	GND	GND	GND
6	+3.4V	+3.4V	ENDEAVOR, UNITY, CPU, CPU peripheral
7	–8V	–8V	–
8	GND	GND	GND
9	GND	GND	GND
10	GND	GND	GND
11	+12V	+12V	Fan, input signal processing system, video signal processing system
12	–	+17.5V	LC driving system
13	GND	GND	GND
14	–	+12V	POWER-ON control (output from the MAIN PWB)



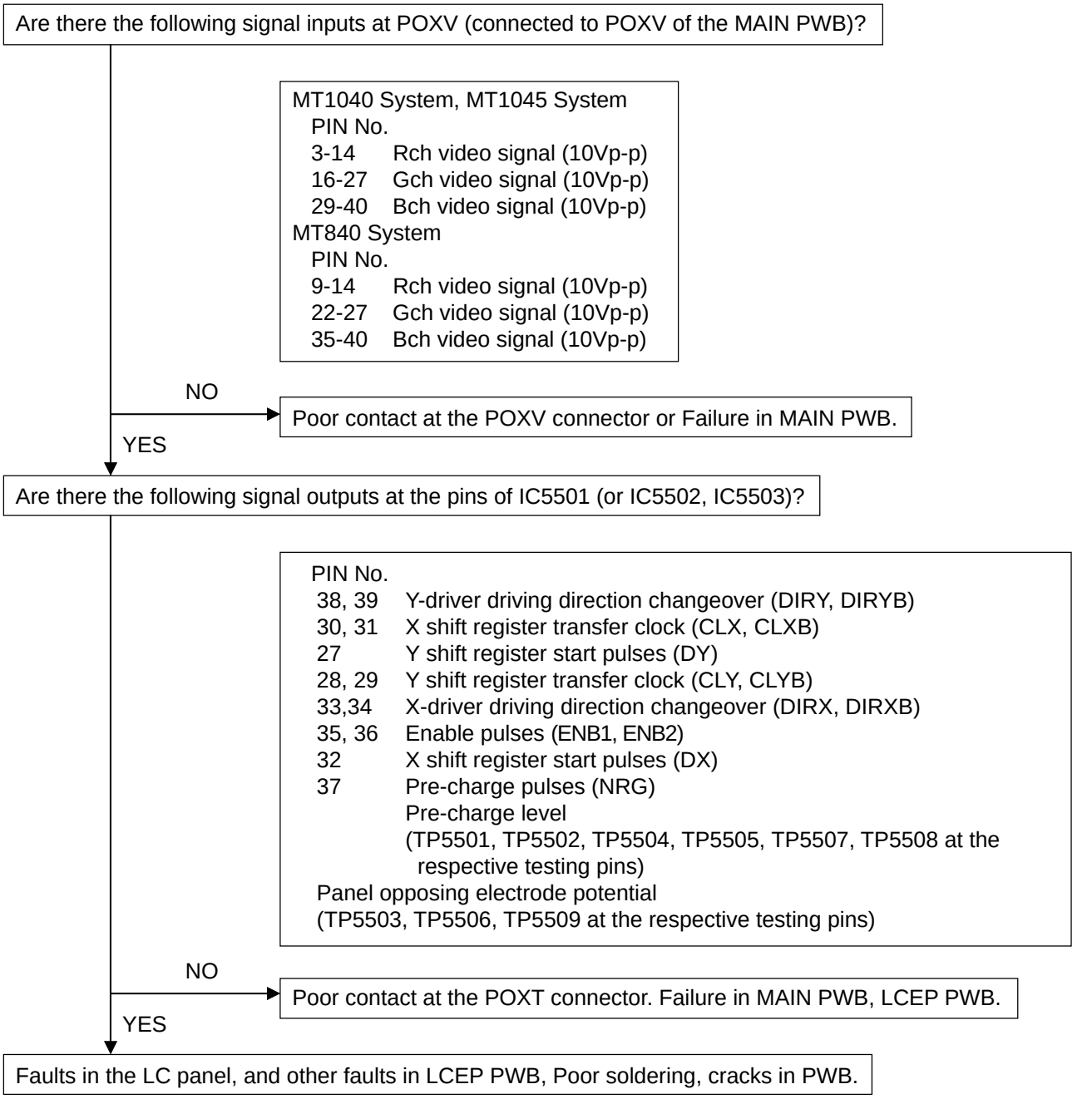
2-2. BALLAST PWB


Is there a DC input of about 380V (300V to 400V) at CP1?
NO
Poor contact at the CP1 connector. Failure in PS PWB.
YES
Are there the following voltage outputs at CP501 (connected to POLM of the MAIN PWB)?
PIN No. Standby Power ON Related circuits
1 0V +1V Lamp lighting control
2 GND GND GND
3 +5V 0V Lamp OFF detection
4 — — NC
NO
Poor contact at the CP501 connector.
Failure in BALLAST PWB and MAIN PWB.
YES
Is ignition sound heard when lighting up the lamp?
YES
Failure elsewhere other than the BALLAST PWB. (Lamp broken)
NO
Other faults in BALLAST PWB, Poor soldering, cracks in PWB.

3. MAIN PWB


Are fuses F3001 to F3005 broken?
YES
Replace the fuses.
NO
Are there the following signal inputs at POMI (connected to POMI of the I/O PWB)?
PIN No. VIDEO/S-VIDEO input COMPONENT RGB input
21 Vertical sync signal (5V) Vertical sync signal (5V) Vertical sync signal (5V)
23 Horizontal sync signal (5V) Horizontal sync signal (5V) Horizontal sync signal (5V)
25 Cb signal (0.5Vp-p) Cb signal (0.5Vp-p) B signal (0.7Vp-p)
27 Y signal (0.7Vp-p) Y signal (1.0Vp-p) G signal (0.7Vp-p)
29 Cr signal (0.5Vp-p) Cr signal (0.5Vp-p) R signal (0.7Vp-p)
NO
Poor contact at the POMI connector. Failure in I/O PWB.
YES
Other faults in MAIN PWB, Poor soldering, cracks in PWB.

4. LCEP PWB


Are there the following signal inputs at POXV (connected to POXV of the MAIN PWB)?
MT1040 System, MT1045 System
PIN No.
3-14 Rch video signal (10Vp-p)
16-27 Gch video signal (10Vp-p)
29-40 Bch video signal (10Vp-p)
MT840 System
PIN No.
9-14 Rch video signal (10Vp-p)
22-27 Gch video signal (10Vp-p)
35-40 Bch video signal (10Vp-p)
NO
Poor contact at the POXV connector or Failure in MAIN PWB.
YES
Are there the following signal outputs at the pins of IC5501 (or IC5502, IC5503)?
PIN No.
38, 39 Y-driver driving direction changeover (DIRY, DIRYB)
30, 31 X shift register transfer clock (CLX, CLXB)
27 Y shift register start pulses (DY)
28, 29 Y shift register transfer clock (CLY, CLYB)
33,34 X-driver driving direction changeover (DIRX, DIRXB)
35, 36 Enable pulses (ENB1, ENB2)
32 X shift register start pulses (DX)
37 Pre-charge pulses (NRG)
Pre-charge level
(TP5501, TP5502, TP5504, TP5505, TP5507, TP5508 at the respective testing pins)
Panel opposing electrode potential
(TP5503, TP5506, TP5509 at the respective testing pins)
NO
Poor contact at the POXT connector. Failure in MAIN PWB, LCEP PWB.
YES
Faults in the LC panel, and other faults in LCEP PWB, Poor soldering, cracks in PWB.

5. I/O PWB

Are there the following signal outputs at POMI (connected to POMI of the MAIN PWB)?

PIN No.	VIDEO/S-VIDEO input	COMPONENT	RGB input
21	Vertical sync signal (5V)	Vertical sync signal (5V)	Vertical sync signal (5V)
23	Horizontal sync signal (5V)	Horizontal sync signal (5V)	Horizontal sync signal (5V)
25	Cb signal (0.5Vp-p)	Cb signal (0.5Vp-p)	B signal (0.7Vp-p)
27	Y signal (0.7Vp-p)	Y signal (1.0Vp-p)	G signal (0.7Vp-p)
29	Cr signal (0.5Vp-p)	Cr signal (0.5Vp-p)	R signal (0.7Vp-p)

NO → Failure in I/O PWB.

YES → Other faults in I/O PWB, Poor soldering, cracks in PWB.

METHOD OF ADJUSTMENTS

- Table of Contents -

1. Outline software descriptions
2. Equipment to be used and working environment
3. Repair and adjustment procedures
   - 3-1. Replacement of the MAIN PWB
   - 3-2. Replacement of the LCEP PWB
   - 3-3. Replacement of the VIDEO-DEC PWB
   - 3-4. Replacement of the LCD panel
4. Various functional descriptions
   - 4-1. Data
   - 4-2. Sub-B/C
   - 4-3. Flicker
   - 4-4. Ghost
   - 4-5. Unif
   - 4-6. Lamp
   - 4-7. Option
5. Error messages
6. Uniformity Pattern

1. Outline software descriptions

This is the PC control software intended for the servicing adjustments to be carried out during the replacement of the MAIN PWB, LCEP PWB, VIDEO-DEC PWB, and/or the LCD panel for the LC (liquid crystal) projector series of the MT840, the MT1040, and the MT1045.
This software enables the adjustment of Sub-Brightness, Sub-Contrast, Flicker, Ghost, and Uniformity as well as the modification of filter usage time, panel usage time, and language selection.
In addition, it is possible to read and write the adjusting data for factory shipment, various set (user) data, and logo data.

2. Equipment to be used and working environment

<Equipment to be used>

- Servicing adjustment software (Ser_99mt.exe Ver1.0)
  Attached files: V-T Data, etc.
- Personal computer [which allows Windows95 or Windows3.1 to operate and the serial port (COM1 or COM2 or COM3) is of the D-SUB9pin.]
- VIDEO signal generator [Automatic adjustment: Generation of the NTSC split color bar output (7 colors) shall be enabled.]
- Component signal generator [Automatic adjustment: Generation of the 15kHz Component Video 60Hz split color bar output (7 colors) shall be enabled.]
- Serial cable (Accessory of the PJ main unit)

<Connections>

- Connect the PC CONTROL terminal (Mini DIN-8pin) of the PJ to either of the serial port COM1 to COM3 (D-SUB9pin) of the personal computer through a serial cable (Accessory of the PJ main unit).
- During Sub-Brightness/Sub-Contrast control for RGB, connect the PJ's RGB1 terminal with an RGB signal generator or an ANALOG RGB output circuit in order to obtain a control signal.
- During Sub-Brightness/Sub-Contrast control for Component, connect the PJ's RGB1 terminal (RGB2 in the case of 15kHz Component Video 60Hz) with a Component signal genreator in order to obtain a control signal.
- During Sub-Brightness/Sub-Contrast control for Video, connect the VIDEO terminal with a Video signal genreator in order to obtain a control signal.

<Personal computer setting to generate control pattern screen output>

- Definition, frequency, and No. of colors of the personal computer
  Make settings at VESA XGA (1024 x 768) 70Hz, high color (16 bits) or higher.
- Method of control pattern screen display
  When the [ON] button is used in the Test Pattern Box, a control pattern is displayed on the personal computer screen. In that case, however, only the test pattern in the [Sub-B/C] tab is displayed. All other control patterns are based on the built-in test patterns.

3. Repair and adjustment procedures

3-1. Replacement of the MAIN PWB

<V-T Data, ADJ Data, and Logo Data copying>

Set the PJ's power supply in the state of STANDBY, and select the [DATA] tab for the servicing software. Perform data Read/Write operation according to the procedures of (1) and (2) below.

(1) Data read

Prior to the replacement, read out the data of the MAIN PWB presently used and save them in the file, as required. (According to the condition of the fault, it may be impossible to save the data.)
Click either [Read (PJ -> File)] button of the V-T data, ADJ data, and Logo data, and designate the file name to save the data.

(2) Data write

After the replacement of the MAIN PWB, select the saved file by clicking either [Write (File -> PJ)] button of the V-T data, ADJ data, and Logo data.
If the MAIN PWB data cannot be saved before the replacement, write the V-T data of the file according to the model as required, by clicking the [Write (File -> PJ)] button of the V-T data.
When all data have been written, pull out the PJ's AC cord and confirm that the Power LED is unlit. Since then, connect the AC cord again.

<Sub-Brightness/Sub-Contrast control>

Select the [Sub-B/C] tab for the servicing software.
According to the procedures of (1), (2), and (3) below, make the respective adjustments of RGB/Component/Video.

(1) Sub-Brightness/Sub-Contrast control for RGB

Select [RGB] in the Auto ADJ Box.
Make adjustments by the method of either (a) or (b) shown below.

(a) Auto-adjustment

As a control signal, enter an input of Window (center: white) of the RGB signal generator or an RGB output of the personal computer. (When the personal computer output is used in automatic control mode, the Window screen is automatically changed.)
When the [Auto] button is clicked in the Auto ADJ Box, automatic adjustment is started.
After the completion of automatic adjustments, use the gray scale to confirm the freedom from coloring.
If there is coloring perceived, make fine adjustments manually according to the procedures of (b) below.

Note: If the definition of the control signal (VESA, XGA 70Hz) or the pattern is found to be improper, normal adjustments cannot be achieved.

(b) Manual adjustment

Make manual adjustments if it is impossible to carry out automatic adjustments.
As a control signal, enter an input of gray scale from the RGB signal generator or an RGB output of the personal computer. Then, display a gray scale by the use of a [Scale] button in the Test Pattern Box. To avoid black collapse, white collapse, and coloring in the gray scale, adjust Sub-Brightness and Sub-Contrast with a scroll bar.
After the completion of adjustments, click the [Set] button in the Data Box.

(2) Sub-Brightness/Sub-Contrast control for Component
Select [Component] in the Auto ADJ Box.
Make adjustments by any method of (a), (b), and (c) shown below.

(a) Auto-adjustment
As a control signal, enter an input of Split Color Bar (7 colors) of the Component signal generator.
When the [Auto] button is clicked in the Auto ADJ Box, automatic adjustment is started.
After the completion of automatic adjustments, use the gray scale and confirm the freedom from coloring.
If there is coloring perceived, make fine adjustments manually according to the procedures of (b) below.
Note: If the control signal pattern is improper, normal adjustments cannot be achieved.

(b) Manual adjustment
Make manual adjustments if it is impossible to carry out automatic adjustments.
As a control signal, enter an input of gray scale from the Component signal generator. To avoid black collapse, white collapse, and coloring in the gray scale, adjust Sub-Brightness and Sub-Contrast with a scroll bar.
After the completion of adjustments, click the [Set] button in the Data Box.

(c) Copying of the video adjustment value
If the Component signal generator is not available, check the [Video -> Comp] in the Auto ADJ Box. If this is done, the same adjustment values as those of Video are written at the time of Video adjustments.

(3) Sub-Brightness/Sub-Contrast control for Video
Select [Video] in the Auto ADJ Box.
Make adjustments by the method of either (a) or (b) shown below.
(a) Auto-adjustment
As a control signal, enter an input of Split Color Bar (7 colors) of the Video signal generator.
When the [Auto] button is clicked in the Auto ADJ Box, automatic adjustment is started.
After the completion of automatic adjustments, use the gray scale and confirm the freedom from coloring.
If there is coloring perceived, make fine adjustments manually according to the procedures of (b) below.
Note: If the control signal pattern is improper, normal adjustments cannot be achieved.

(b) Manual adjustment
Make manual adjustments if it is impossible to carry out automatic adjustments.
As a control signal, enter an input of gray scale from the Video signal generator. To avoid black collapse, white collapse, and coloring in the gray scale, adjust Sub-Brightness and Sub-Contrast with a scroll bar.
After the completion of adjustments, click the [Set] button in the Data Box.
After the completion of adjustments for RGB, Component, and Video respectively, a check mark is given to the check box located at the left end in the Auto ADJ Box.

<Flicker control>
Select the [Flicker] tab for the servicing software.
According to the procedures of (1) and (2) below, make the respective adjustments of Floor/Ceiling.

(1) Floor control
Check [Floor].
Click the [ON] button in the Test Pattern Box and display the built-in horizontal line signal. When the [ON] button is continuously clicked, a toggle-state changeover takes place in the course of R -> G -> B -> R. Make adjustments with a scroll bar until Flicker in the center becomes smallest for each color.

(2) Ceiling control
Check [Ceiling].
Click the [ON] button in the Test Pattern Box and display the built-in horizontal line signal. When the [ON] button is continuously clicked, a toggle-state changeover takes place in the course of R -> G-> B -> R. Make adjustments with a scroll bar until Flicker in the center becomes smallest for each color.
Upon completion of adjustments for both (1) and (2) above, click the [Set] button in the Data Box.
Clear the built-in test signal by clicking the [CLS] button in the Test Pattern Box.

<Ghost control>
Select the [Ghost] tab for the servicing software.
Click the [ON] button in the Test Pattern Box and display the built-in ghost adjustment signal. Make adjustments with a scroll bar until Ghost becomes smallest for each color.
Upon completion of adjustments, click the [Set] button in the Data Box.
Clear the built-in test signal by clicking the [CLS] button in the Test Pattern Box.

<Uniformity control>
Adjustments for Uniformity are carried out only if the uniformity in the half tone is worse.
These adjustment functions are available only if the firmware is for Ver.1.18 or above.
Select the [Unif] tab for the servicing software.

(1) Overall uniformity adjustments
If ON/OFF setting is at ON, click the [OFF] button.
Click the [50%] and [25%] buttons respectively in the Test Pattern Box and display the built-in raster signal to see the uniformity pattern.
Click the [ON] button of ON/OFF setting.
Select and click any of the [A] to [F] buttons for compensation suitable for the uniformity pattern.
Click the [50%] and [25%] buttons respectively in the Test Pattern Box once more again and check the result of compensation. (Confirmation of both is needed since the effect of compensation is different between 50% and 25%.)

(2) Corner uniformity adjustments
If the corner uniformity seems to be inadequate, check the RGB check box for the color that has to be emphasized.
Click the [LU] button if the place of compensation is located at the top left. Click the [LD] button if it is located at the bottom left, the [RU] button for the top right, and the [RD] button for the bottom right, respectively.
If the condition of no compensation is found to be most optimal as a result of (1) and (2) above, click the [OFF] button of ON/OFF setting.
If the initial condition is found to be most optimal as a result of (1) and (2) above, click the [Reset] button.
Note: If the firmware is for Ver.1.18 or below, the condition becomes worse in the case of up/down/right/left reversal. In such a case, compensation should be set at OFF.

<Modification of Lamp, Filter, and Panel usage time>
In case of failure in <V-T Data, ADJ Data, and Logo Data copying> that is to be conducted in the first place, the usage time for each must have been set at “0 Hours.” Set up the usage time, as required.
Set the PJ’s power supply in the state of STANDBY, and select the [Lamp] tab for the servicing software.
Change the usage time respectively according to the procedures of (1), (2), and (3) below.

(1) Modification of lamp usage time
Check [Change time (Lamp Usage Time)] and set up the lamp usage time with a scroll bar.
When setting is finished, click the [Set] button.

(2) Modification of filter usage time
Check [Change time (Filter Usage Time)] and set up the lamp usage time with a scroll bar.
When setting is finished, click the [Set] button.

(3) Modification of panel usage time
Check [Change time (Panel Usage Time)] and set up the lamp usage time with a scroll bar.
When setting is finished, click the [Set] button.
When the procedures of (1), (2), and (3) are finished, pull out the PJ's AC cord and confirm that the Power indicator is unlit. Since then, connect the AC cord again.

<Language setting>
Select the [Lamp] tab for the servicing software.
For the domestic (Japanese) model, check [MTxxxJ Model] in the Language Box.
In the case of an overseas model, check [Mtxxx, G, GS, H, E, ES Model].
In this case, in order to hold the user setting values of <V-T Data, ADJ Data, and Logo Data copying> that is to be conducted in the first place, factory data only are rewritten. In some cases accordingly, there can be no coincidence between the preset language and the actually displayed language (by user setting).

3-2. Replacement of the LCEP PWB

<Flicker control>
Adjustments are similar to those for the replacement of the MAIN PWB.

3-3. Replacement of the VIDEO-DEC PWB

<Sub-Brightness/Sub-Contrast control>
Adjustments are similar to those for the replacement of the MAIN PWB.

3-4. Replacement of the LCD panel

<Sub-Brightness/Sub-Contrast control>
Make fine adjustments manually only if there is coloring perceived in the gray scale.
Regarding the procedures of adjustments, refer to the description about the replacement of the MAIN PWB.

<Flicker control>
Adjustments are similar to those for the replacement of the MAIN PWB.

<Ghost control>

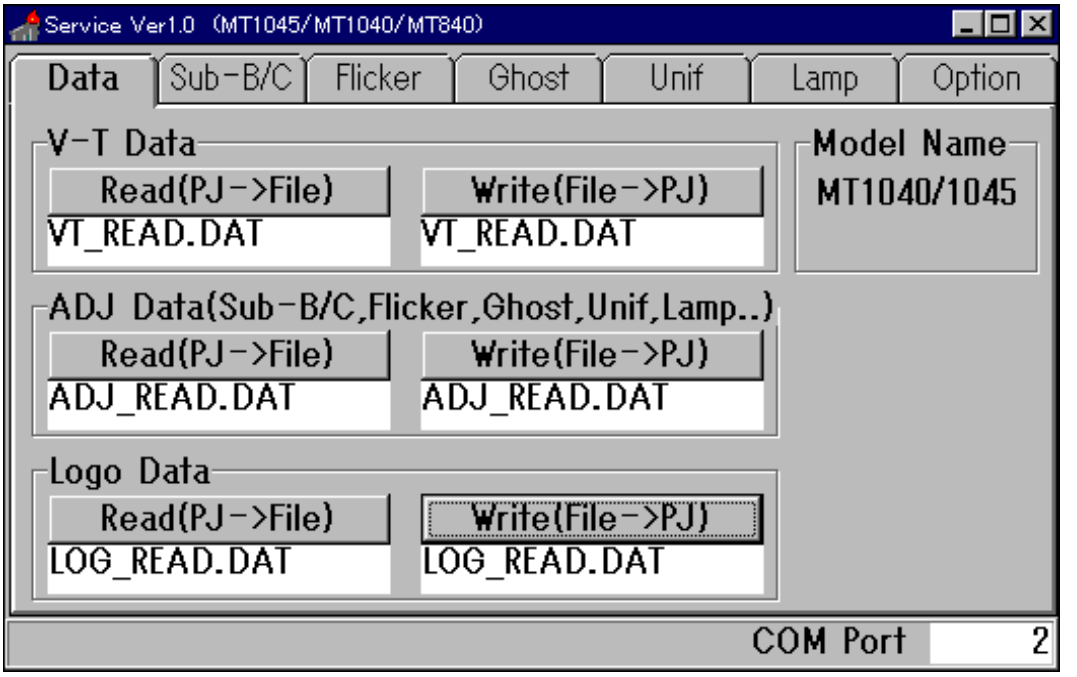
Adjustments are similar to those for the replacement of the MAIN PWB.

<Uniformity control>
Adjustments are similar to those for the replacement of the MAIN PWB.

<Modification of Lamp, Filter, and Panel usage time>
Change the panel usage time to "0 Hours."
Regarding the procedures of modification, refer to the description about the replacement of the MAIN PWB.
If the firmware is for Ver.1.3x or above, clearing is possible by the use of an ON-screen menu in the serviceman mode.

4. Various functional descriptions

4-1. Data



<Model Name>
The present PJ data are acquired and the discrimination of the model is conducted.
[MT840] is displayed in the case of the MT840 Series. [MT1040/1045] is displayed in the case of the MT1040 Series or the MT1045 Series.

<V-T Data Read and Write>
At time of the replacement of the MAIN PWB, this function is used to write the V-T data before replacement in the new MAIN PWB.
V-T Data Read and Write should be carried out after the PJ power supply has been set in the standby state.
Save Dialog is open when the [Read (PJ -> File)] button is clicked in the V-T Data Box in the state that the MAIN PWB is left attached before the replacement. Designate the file name at that time.
The V-T data are read out of the PJ and saved with the specified file name.
The saved file name is displayed beneath the [Read (PJ -> File)] button.
Open Dialog is open when the [Write (File -> PJ)] button is clicked in the V-T Data Box after the replacement of the MAIN PWB. Select the saved file name.
The V-T data are written from the designated file to the PJ.
The written file name is displayed beneath the [Write (PJ -> File)] button.

<ADJ Data Save and Write>

This function is used to write the ADJ data before replacement (data adjusted at the time of shipment and various user setting values) in the new MAIN PWB during the replacement of the MAIN PWB.
The data to be rewritten are the factory shipping adjustment data for Sub-Brightness/ Sub-Contrast, Flicker, Ghost, and Uniformity and also the various usage time data for the lamp, filter, and the panel.
ADJ Data Save and Write should be carried out always under the condition that the PJ's power supply is made to stay in the standby state.
Save Dialog is open when the [Read (PJ -> File)] button is clicked in the ADJ Data Box in the state that the MAIN PWB is left attached before the replacement. Designate the file name at that time.
The ADJ data are read out of the PJ and saved with the specified file name.
The saved file name is displayed beneath the [Read (PJ -> File)] button.
Open Dialog is open when the [Write (File -> PJ)] button is clicked in the ADJ Data Box after the replacement of the MAIN PWB. Select the saved file name.
The ADJ Data are then written from the designated file to the PJ.
The written file name is displayed beneath the [Write (PJ -> File)] button.
When the ADJ Data have been written, pull out the PJ's AC cord and confirm that the Power LED is unlit.

<Logo Data Save and Write>

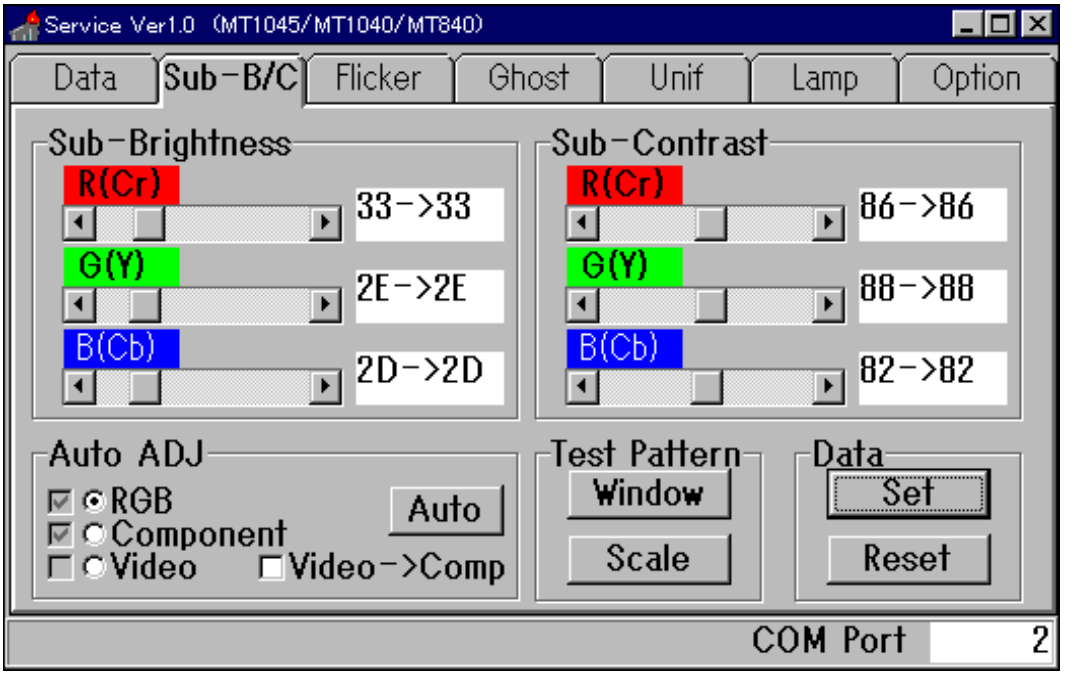
This function is used to write the Logo Data before replacement (for user registration) in the new MAIN PWB during the replacement of the MAIN PWB.
Logo Data Save and Write should be carried out always under the condition that the PJ's power supply is made to stay in the standby state.
Save Dialog is open when the [Read (PJ -> File)] button is clicked in the Logo Data Box in the state that the MAIN PWB is left attached before the replacement. Designate the file name at that time.
The Logo Data are read out of the PJ and saved with the specified file name.
The saved file name is displayed beneath the [Read (PJ -> File)] button.
Open Dialog is open when the [Write (File -> PJ)] button is clicked in the Logo Data Box after the replacement of the MAIN PWB. Select the saved file name.
The Logo Data are then written from the designated file to the PJ.
The written file name is displayed beneath the [Write (PJ -> File)] button.

Note 1: According to the condition of the fault, it may be impossible to save the data. The Default Data are written in the MAIN PWB in advance.

Note 2: ADJ Data Write can be conducted under the condition that the PJ's power supply has been made to stay in the standby state. Unless the PJ's AC cord is pulled after ADJ Data writing, the written data are not written in the Flash ROM.

Note 3: If all data reset is performed, the various user setting values for ADJ Data Write are not held but returned to the factory shipment data.

4-2. Sub-B/C



<Sub-Brightness/Sub-Contrast>
This function is used for the manual adjustment of Sub-Brightness and Sub-Contrast.
Three types of signals are independently retained for the data for RGB/ Component/ Video. The selected signal data are acquired in the Auto ADJ Box and displayed beside the scroll bar on the screen for R(Cr)/ G(Y)/ B(Cb) respectively.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value. To avoid black collapse, white collapse, and coloring in the gray scale, make adjustments with a scroll bar.
Adjusting range: 00H - FFH

<Auto ADJ>

This function is used for the signal selection and automatic adjustment during the adjustment of Sub-Brightness and Sub-Contrast.

Select the adjusting signal from RGB, Component, and Video.

According to the selected signal, Signal Changeover (RGB/ Component -> RGB1, Video -> Video), Data Read, and Reset (for the signal presently displayed) can be carried out. In the case of Component (15kHz Component Video 60Hz), however, Signal Changeover to RGB2 and Reset (for the signal presently displayed) should be carried out manually. When the [Auto] button is clicked, the automatic adjustment is carried out for the selected signal.

When using a signal generator for the automatic adjustment of RGB, setting should be made at Window (center: white) for VESA XGA 70Hz.

When signals of a personal computer are used, the Window mode is automatically assumed.

For the automatic adjustment of Component, the signals should be arranged for the split color bar output (7 colors).

For the automatic adjustment of Video, the signals should be arranged for the split color bar output (7 colors).

If Component cannot be adjusted, [Video -> Comp] should be checked.

The same data are copied on Component in the same manner as for the Video adjustment.

If the automatic adjustment is performed or when the data are written by the use of the [Set] button in the Data Box, a check mark is given to the check box located at the left of RGB/ Component/ Video selection, as a sign to indicate the completion of adjustments.

The check mark disappears when the data are reset with the [Reset] button in the Data Box.

<Test Pattern>

This function is used when the personal computer operated for the present adjustment is used as a signal source.

When the [Window] button is clicked, Window is displayed on the personal computer screen. This Window is used when the automatic adjustment is performed for RGB. During the automatic adjustment, however, it is unnecessary to think of any display in advance because Window is automatically displayed at that time.

When the [Scale] button is clicked, a 16-gradation gray scale is displayed on the screen of the personal computer. The Test Pattern disappears when it is double-clicked.

<Data>

When the [Set] button is clicked, the adjusting values of Sub-Brightness and Sub-Contrast adjusted with the scroll bar are written in the Flash ROM.

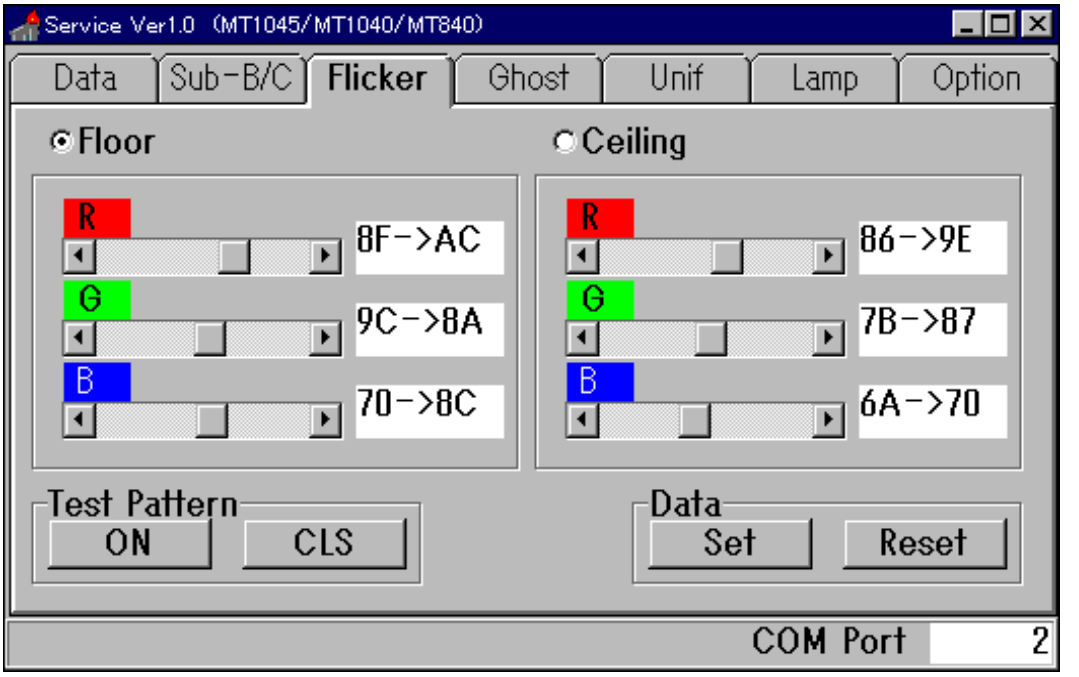
If automatic adjustments are carried out, the above-mentioned setting is not required because these values are automatically written in the Flash ROM.

When the [Reset] button is clicked, the adjusting values of Sub-Brightness and Sub-Contrast are returned to the initial values (at the time of adjustment software start) and then written in the Flash ROM.

Note 1: The data adjusted with the scroll bar are temporary, and hence they are not retained in the PJ. Execute [Set] and write them in the Flash ROM.

Note 2: Automatic adjustments are generally carried out while the specified place in the screen is viewed. No adjustments are possible if the pattern, definition, etc., are improper.

4-3. Flicker

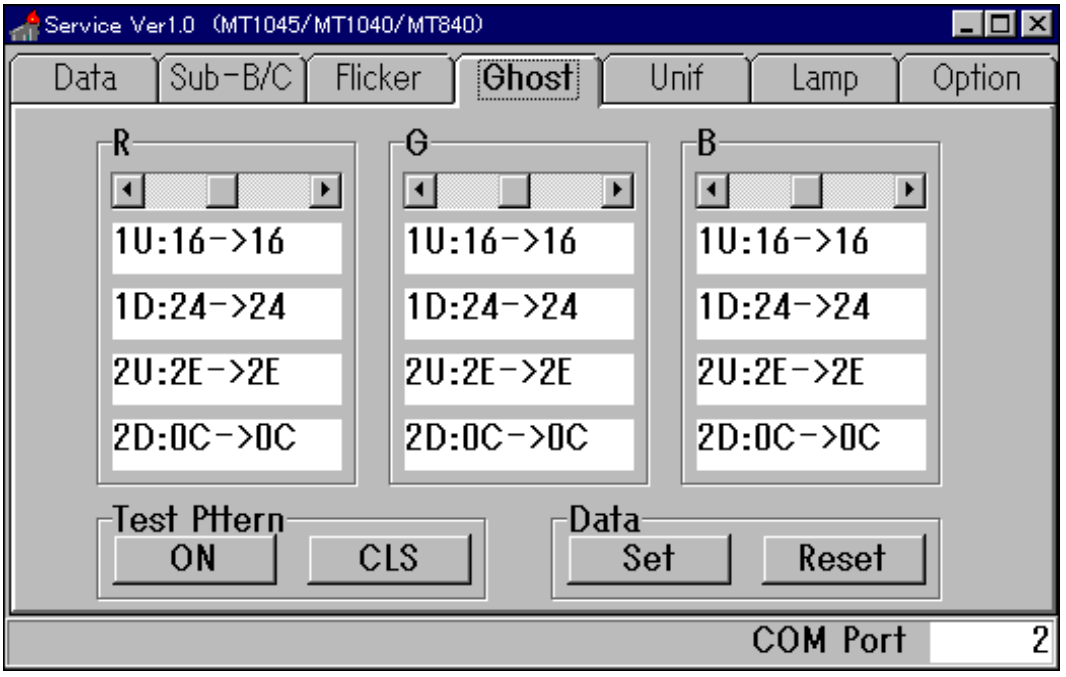


<Floor/ Ceiling>
This function is used for the Flicker adjustment.
The data are maintained for Floor and Ceiling respectively.
The present data of the PJ are acquired and displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
Select the method of projection for the adjustment of Floor and Ceiling. The scroll bar becomes available on the selected side.
Display the test pattern and make adjustments with the scroll bar until the flicker in the center becomes minimum for R/ G/ B, respectively.
Adjusting range: 00H - FFH

<Test Pattern>
This function is used when a built-in test pattern is displayed for the Flicker adjustment.
When the [ON] button is clicked, a horizontal line signal of R is displayed on the projected screen.
When the [ON] button is continuously clicked since then, a toggle-state changeover takes place in the course of Horizontal Line Signal of G -> Horizontal Line Signal of B -> Horizontal Line Signal of R, and so on.
The test pattern is cleared (input changeover to RGB1) with the [CLS] button.

<Data>
When the [Set] button is clicked, the adjusting values of Flicker adjusted with the scroll bar are written in the Flash ROM.
When the [Reset] button is clicked, the adjusting values of Flicker are returned to the initial values (at the time of adjustment software start) and then written in the Flash ROM.
Note 1: The data adjusted with the scroll bar are temporary, and hence they are not retained in the PJ. Execute [Set] and write them in the Flash ROM.

4-4. Ghost

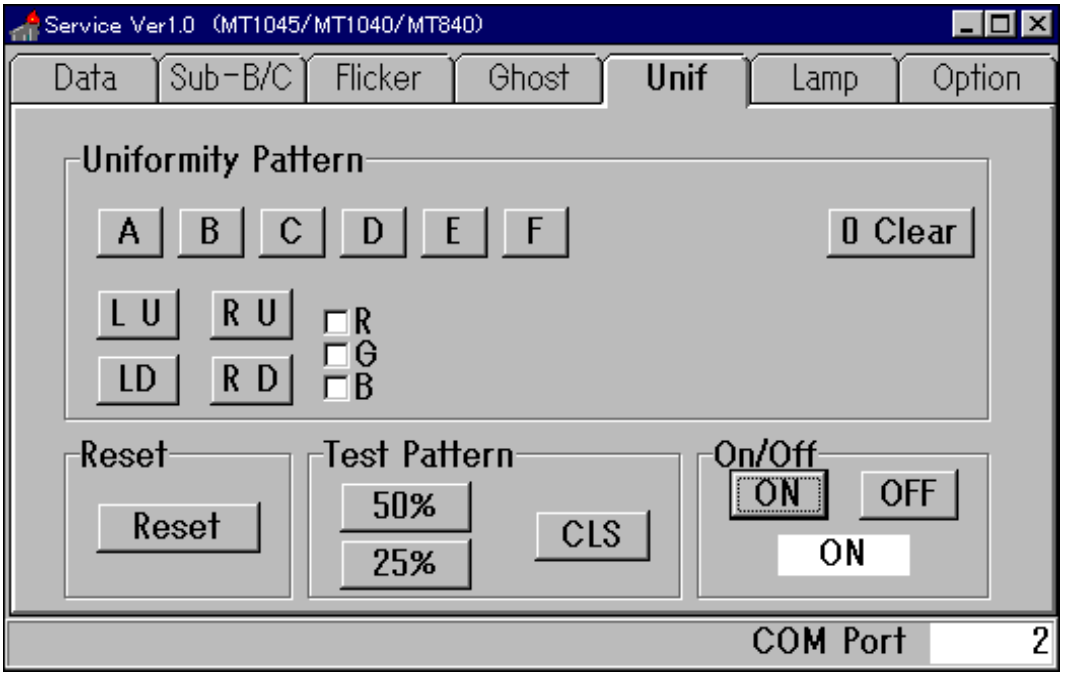


<Ghost R/ G/ B>
This function is used for the Ghost adjustment.
The present data of the PJ are acquired and displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
The data come in 4 types for each color, but these 4 types are increased and decreased simultaneously during the adjustment.
Display the test pattern and make adjustments with the scroll bar until the Ghost in the half tone area on the right side of the pattern becomes minimum for R/ G/ B, respectively.
Adjusting range: "MT1040/MT1045" 00H - 2FH
"MT840" 00H - 17H

<Test Pattern>
This function is used when a built-in test pattern is displayed for the Ghost adjustment.
When the [ON] button is clicked, a Ghost adjusting signal is displayed on the projected screen.
The test pattern is cleared (input changeover to RGB1) with the [CLS] button.

<Data>
When the [Set] button is clicked, the adjusting values of Ghost adjusted with the scroll bar are written in the Flash ROM.
When the [Reset] button is clicked, the adjusting values of Ghost are returned to the initial values (at the time of adjustment software start), and then written in the Flash ROM.
Note 1: The data adjusted with the scroll bar are temporary, and hence they are not retained in the PJ. Execute [Set] and write them in the Flash ROM.

4-5. Unif



<Uniformity Pattern>
This function is used for the Uniformity compensation.
The data acquired for the PJ at the time of adjustment software start are stored as the initial values.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
When the [A] to [F] buttons are clicked, compensation is carried out for the six typical uniformity patterns (See 6. Uniformity Pattern).
When any of the [LU], [LD], [RU], and [RD] buttons is clicked, only the corner of the present compensation data is added with the data to be compensated for.
The letter symbols of [LU], [LD], [RU], and [RD] denote top left, bottom left, top right, and bottom right.
These buttons are used to compensate for the color to which a check mark of R/ G/ B is attached.
However, if the compensation is reviewed again by the use of the [A] to [F] buttons, the function of this corner compensation is canceled.
When the [0 Clear] button is clicked, all data become “00” that means no compensation.
These compensation data are not effective on the actual screen unless Compensation is turned ON with the ON/OFF button.

<ON/OFF>
This function is used for ON/OFF of the Uniformity compensation.
The present data of the PJ are acquired and the present status is displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values.
When the [ON] button is clicked, the state of Compensation ON is assumed.
When the [OFF] button is clicked, the state of Compensation OFF is assumed.

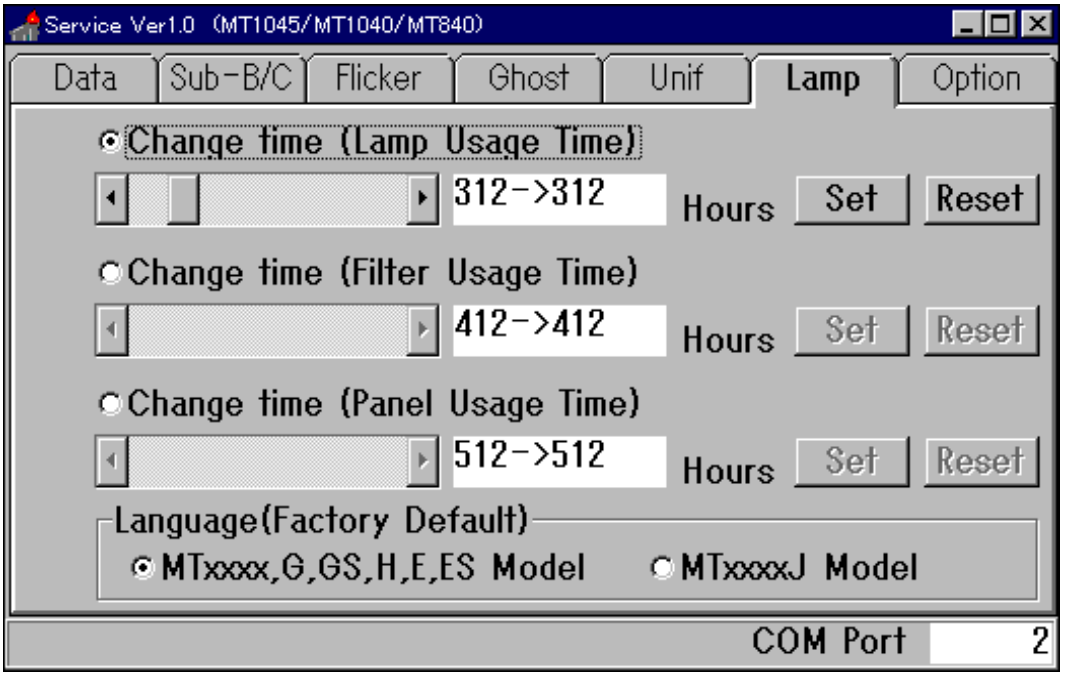
<Test Pattern>
This function is used for the confirmation of the Uniformity compensation.
When the [50%] button is clicked, the 50% Raster is displayed on the projected screen.
When the [25%] button is clicked, the 25% Raster is displayed on the projected screen.
The test pattern is cleared (input changeover to RGB1) with the [CLS] button.

<Reset>
When the [Reset] button is clicked, the adjusting values of Uniformity and Compensation ON/OFF are returned to the initial values (at the time of adjustment software start), and then written in the Flash ROM.

Note 1: There are the typical six types available for the compensation patterns. Since the Uniformity pattern comes in many ways, however, compensation for everything is inevitably impossible to carry out.
In some cases, the result may get worse. In such a case, Compensation should be set at OFF.

Note 2: If the firmware is for Ver.1.18 or below, the condition may become worse in the case of up/down/right/left reversal. In such a case, Compensation should be set at OFF.

4-6. Lamp



<Change time (Lamp Usage Time)>
This function is used for the modification of the lamp usage time.
Modification of the lamp usage time should be carried out always under the condition that the PJ's power supply is made to stay in the standby state.
The present data of the PJ are acquired and displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
If it is necessary to change the lamp usage time, give a check mark to the Change Time. After that, the scroll bar and the [Set] and [Reset] buttons become available.
Make a proper time setting with the scroll bar.
When the [Set] button is clicked, the lamp usage time set with the scroll bar is written in the Flash ROM.
When the [Reset] button is clicked, the lamp usage time is returned to the initial value (at the time of adjustment software start), and then written in the Flash ROM.
When the lamp usage time is changed ([Set] and [Reset]), pull out the PJ's AC cord without fail and confirm that the Power LED is unlit.
When changing the lamp usage time to "0 Hours," clearing is possible by the use of an ON-screen menu.
Setting range: 0 Hour - 2000 Hours

<Change time (Filter Usage Time)>
This function is used for the modification of the filter usage time.
Modification of the filter usage time should be carried out always under the condition that the PJ's power supply is made to stay in the standby state.
The present data of the projector are acquired and displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
If it is necessary to change the filter usage time, give a check mark to the Change Time. After that, the scroll bar and the [Set] and [Reset] buttons become available.
Make a proper time setting with the scroll bar.
When the [Set] button is clicked, the filter usage time set with the scroll bar is written in the Flash ROM.
When the [Reset] button is clicked, the filter usage time is returned to the initial value (at the time of adjustment software start), and then written in the Flash ROM.
When the filter usage time is changed ([Set] and [Reset]), pull out the PJ's AC cord without fail and confirm that the Power LED is unlit.
When changing the filter usage time to "0 Hours," clearing is possible by the use of an ON-screen menu in the serviceman mode, provided that the firmware is for Ver.1.3x or above.
Setting range: 0 Hour - 2000 Hours

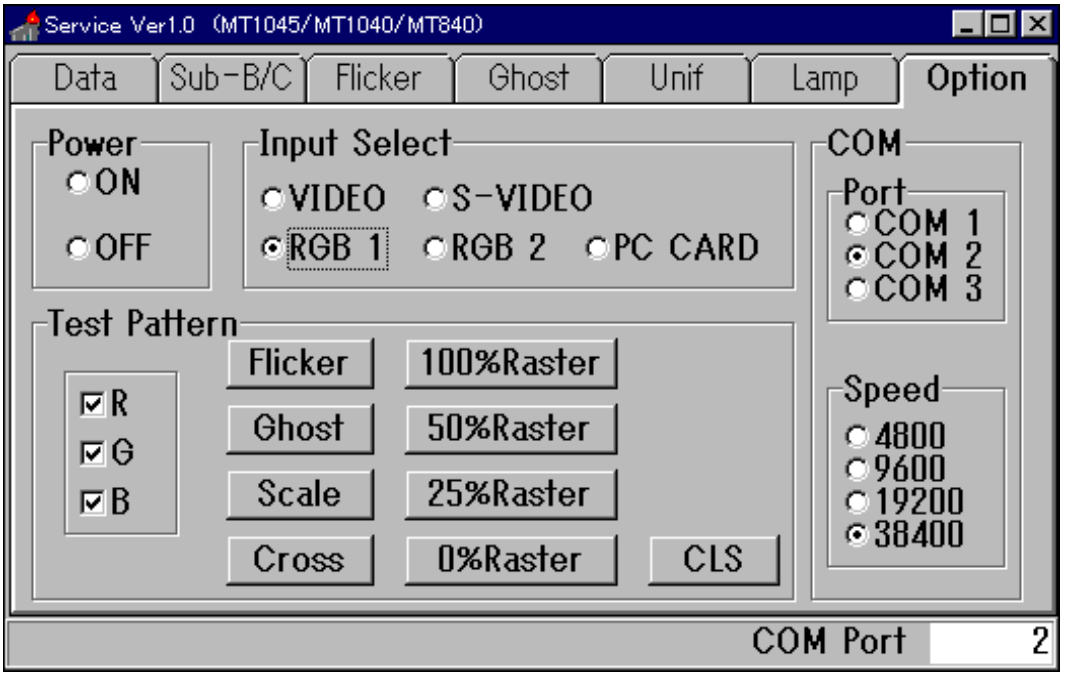
<Change time (Panel Usage Time)>
This function is used for the modification of the panel usage time.
Modification of the panel usage time should be carried out always under the condition of standby.
The present data of the projector are acquired and displayed on the screen.
The data acquired initially (at the time of adjustment software start) are stored as the initial values and displayed on the left side of the arrow. The present values are displayed on the right side of the arrow.
If ADJ Data Write is carried out with [Data], however, the written data are regarded as the initial value.
If it is necessary to change the panel usage time, give a check mark to the Change Time. After that, the scroll bar and the [Set] and [Reset] buttons become available.
Make a proper time setting with the scroll bar.
When the [Set] button is clicked, the panel usage time set with the scroll bar is written in the Flash ROM.
When the [Reset] button is clicked, the panel usage time is returned to the initial value (at the time of adjustment software start), and then written in the Flash ROM.
When the panel usage time is changed ([Set] and [Reset]), pull out the AC cord without fail and confirm that the Power LED is unlit.
When changing the panel usage time to "0 Hours," clearing is possible by the use of an ON-screen menu in the serviceman mode, provided that the firmware is for Ver.1.3x or above.
Setting range: 0 Hour - 2000 Hours

<Language>
Make settings of the Default Data for OSD display for both domestic (Japanese) model (written in Japanese) and overseas models (written in English).
For the domestic (Japanese) model, select [MTxxxxJ Model].
In the case of an overseas model, select [Mtxxxx, G, GS, H, E, ES Model].
This setting is made only for the Factory Data. There shall be no change in user setting. (This is because user setting is maintained when ADJ Data Write is carried out with [Data].)

Note 1: If ADJ Data Read/Write rewriting has been effected with [Data] during the replacement of the MAIN PWB, the data of the lamp, filter, panel usage time, and language have also been rewritten into the former values. Therefore, no more change is needed for these data.

Note 2: Operation of [Set]/ [Reset] for the lamp, filter, and panel usage time should be carried out in the standby state. In addition, the written data cannot be put in the Flash ROM unless the PJ's AC cord is pulled out after the operation of [Set]/ [Reset].

4-7. Option



<Power>
Used for Power ON/OFF.
When [ON]/[OFF] is selected, the power supply is turned on and off.

<Input Select>
Used for input changeover.
Changeover is effected to the selected input.

<Test Pattern>
Used for the display of various built-in test patterns.
[Flicker]: Horizontal line signal for flicker adjustment
[Ghost]: Signal for ghost adjustment
[Scale]: 16-gradation horizontal gray scale
[Cross]: Cross hatch
[100% Raster]: All-white raster
[50% Raster]: 50% brightness raster
[25% Raster]: 25% brightness raster
[0% Raster]: All-black raster
[CLS]: Test Pattern clear (Changed over to RGB1 input)
[R]/ [G]/ [B]: Except for [Ghost], the test pattern appears in the color provided with a check mark.

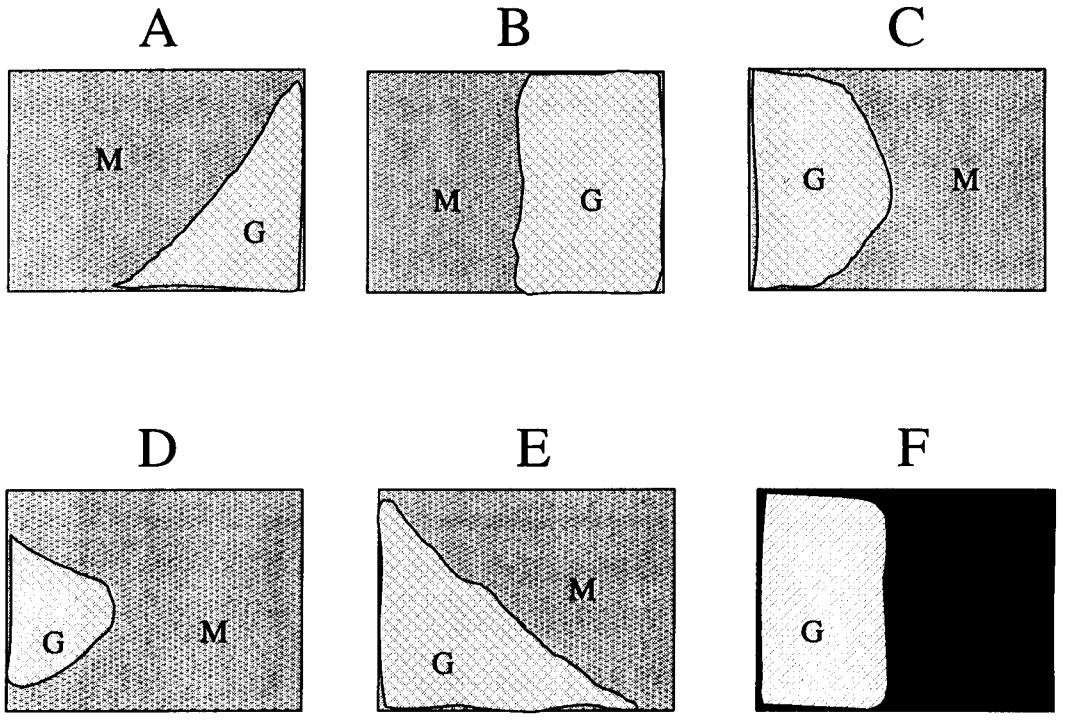
<COM>
This function is used to select the Com Port and the Baud Rate for the personal computer.
No communication is possible unless there is coincidence between the Baud Rate and PJ setting.
The Default setting for the projector is 38,400 bps.

5. Error messages

"RS xxxxxx"
This is a communication error in conjunction with the PJ.
Check the connections and confirm whether the PJ's main power supply is turned on.
"ACK Data length error", "R-CheckSum error", "Write error"
This is a communication error in conjunction with the PJ.
Confirm that the PJ is free from abnormality. Repeat the operation from the beginning.
"Can not open comport"
Failure in opening the serial port.
Check for any application that occupies the serial port.
"Do not open comport"
Communication is maintained under the condition that the above-mentioned serial port opening has failed.
Check for any application that occupies the serial port.
"File format error", "Address error"
For data writing from the file, the data format of the specified file has been found to be wrong.
Specify the correct file.
"Data write error!! Please retry."
Data writing has failed. Repeat the operation from the beginning.
"Leave error", "Adjust Error"
Automatic adjustment of Sub-Brightness/ Sub-Contrast has failed.
Repeat the operation from the beginning.

6. Uniformity Patterns

The patterns set with the Uniformity Pattern [A] - [F] buttons are as follows:
[A]: Diagonal color unevenness - Bottom right green (yellow) / Top left magenta (blue)
[B]: Right and left color unevenness - Right green (yellow) / Left magenta (blue)
[C]: Triangular color unevenness excessive - Right magenta (blue) / Left green (yellow)
[D]: Triangular color unevenness slight - Right magenta (blue) / Left green (yellow)
[E]: Diagonal color unevenness - Top right magenta (blue) / Bottom left green (yellow)
[F]: Right and left color unevenness - Right magenta (blue) / Left green (yellow)



G:Green
M:Magenta

Adjustment of the Optical System

1. Adjustments during generation of Shadow

1-1. Tools to be used

1-2. Preparation for adjustments during generation of shadow

1-3. Optical axis adjustment in vertical direction (Light paths G and R)

1-4. Optical axis adjustment in horizontal direction (Light paths G and R)

1-5. When the shadow color is yellow

1-6. Preparation for adjustments in case of optical axis displacement during fixing

2. Polarizing Plate Adjustments

1. Adjustments during generation of shadow

These adjustments are carried out for repair services to be done when blur in color (referred to as shadow hereafter) appears at the edge part of the projected screen, possibly caused by the optical engine block.
Adjustments are carried out according to the Flow Chart for Shadow Adjustments in Fig. 3, Detailed Drawing of the FL Adjustment Block in Fig. 4, Details of the Mirror Adjustment Block in Fig. 5, etc.

1-1. Tools to be used

The following tools should be used for these adjustments.
<Tools to be used>
• Ball driver for FL adjustments: 1.27mm
• Precision minus screwdriver for FL and mirror adjustments: 5.0mm in width
<Recommendable tools to be used>
• Ball driver: Made by Futaba, Ball driver DB-13 (1.27mm) (92339570)

<Extend cable>
• 73895157 (30pin * 600mm)
• 73895158 (40pin * 600mm)

1-2. Preparation for adjustments during generation of shadow

Since it is necessary to light up the lamp and drive the cooling fan, only the two flexible cables used to combine the MAIN PWB with the LCEP PWB shall be disconnected and laid by the side of the set.

1-3. Optical axis adjustment in vertical direction (Light paths G and R)

When the color of shadow is magenta, cyan, or blue, adjust the zoom lens to the WIDE end (where the picture becomes largest).
Adjust the lens focus for the picture overall. This adjustment should be carried out for all white, all red, or all green. After the completion of adjustments, confirm the result in the state of all white.
If there is a shadow in the vertical direction, remove the sheet (OPT cover B) and replace the vertical adjusting screw. [Part name: Nylock screw (HLSS2.5*10) Part No.: 24N04511] At that time, use a ball driver (1.27mm) and try to move the vertical adjusting screw to adjust the optical axis of the screen in vertical direction. In this manner, the shadow can be eliminated from the projected screen.

1-4. Optical axis adjustment in horizontal direction (Light paths G and R)

When the color of shadow is magenta, cyan, or blue, loosen the two fixing screws located at the bottom of the FL adjusting block, by 1/2 to 1 turn respectively.
Insert a minus screwdriver (3.0mm in width) in the square hole located at the bottom of the FL adjusting block, in order to move the FL adjusting block to the right and left so that the optical axis can be adjusted in the horizontal direction of the screen. Adjust this optical axis to the center until no shadow can appear on the projected screen.
When the shadow disappears from the projected screen, fix the two fixing screws located at the bottom surface, using a torque screwdriver at 6kgfocm to 7kgfocm.
After the completion of vertical and horizontal adjustments, install the sheet (OPT cover B) [Part No.: 24J15281] in the specified position.

1-5. When the shadow color is yellow

Move the zoom lens to the WIDE end (where the picture becomes largest).
Adjust the lens focus for the picture overall. This adjustment should be carried out for all white or all green. After the completion of adjustments, confirm the result in the state of all white.
Loosen the fixing screw located at the mirror adjusting block, by 1/2 to 1 turn.
Insert a minus screwdriver (3.0mm in width) in the triangular hole located at the top of the OPT cover, in order to move the mirror adjusting block to the right and left so that the optical axis can be adjusted in the horizontal direction. Adjust this optical axis to the center until no shadow can appear on the projected screen.
When the optical axis has been correctly adjusted in the horizontal direction of the screen, fix the fixing screw located at the top, at a torque of 6kgfocm to 7kgfocm. If there is a yellow shadow in the vertical direction, make the similar retouch in the same manner as for a shadow in magenta, cyan, or blue color.
Also at that time, confirm that there is no shadow in any color other than yellow on the projected screen.

1-6. Preparation for adjustments in case of optical axis displacement during fixing

Make readjustments according to the steps of 1-2 to 1-5 above.

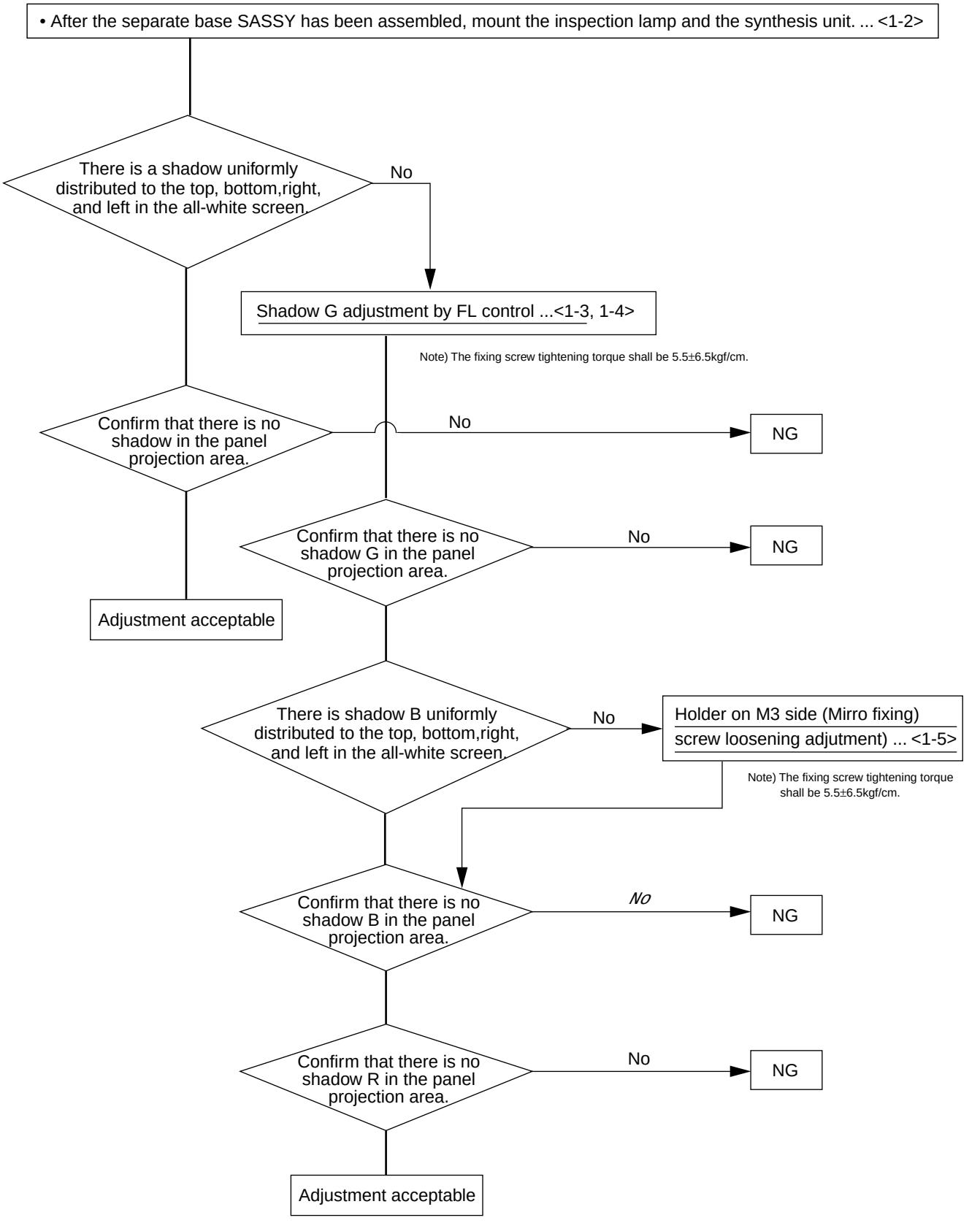
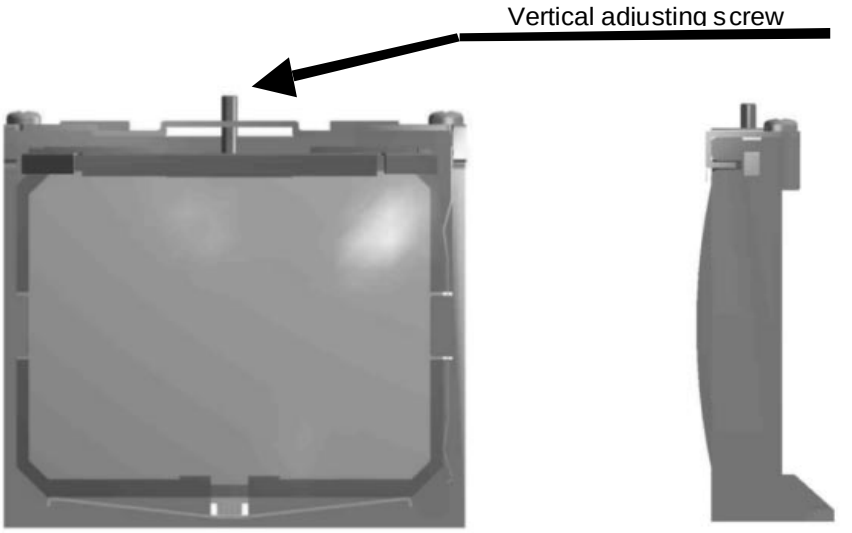

• After the separate base SASSY has been assembled, mount the inspection lamp and the synthesis unit. ... <1-2>
There is a shadow uniformly distributed to the top, bottom,right, and left in the all-white screen.
No
Shadow G adjustment by FL control ...<1-3, 1-4>
Note) The fixing screw tightening torque shall be 5.5±6.5kgf/cm.
Confirm that there is no shadow in the panel projection area.
No
NG
Confirm that there is no shadow G in the panel projection area.
No
NG
Adjustment acceptable
There is shadow B uniformly distributed to the top, bottom,right, and left in the all-white screen.
No
Holder on M3 side (Mirro fixing) screw loosening adjutment) ... <1-5>
Note) The fixing screw tightening torque shall be 5.5±6.5kgf/cm.
Confirm that there is no shadow B in the panel projection area.
No
NG
Confirm that there is no shadow R in the panel projection area.
No
NG
Adjustment acceptable

Fig. 3 Shadow Adjustment Flow Chart



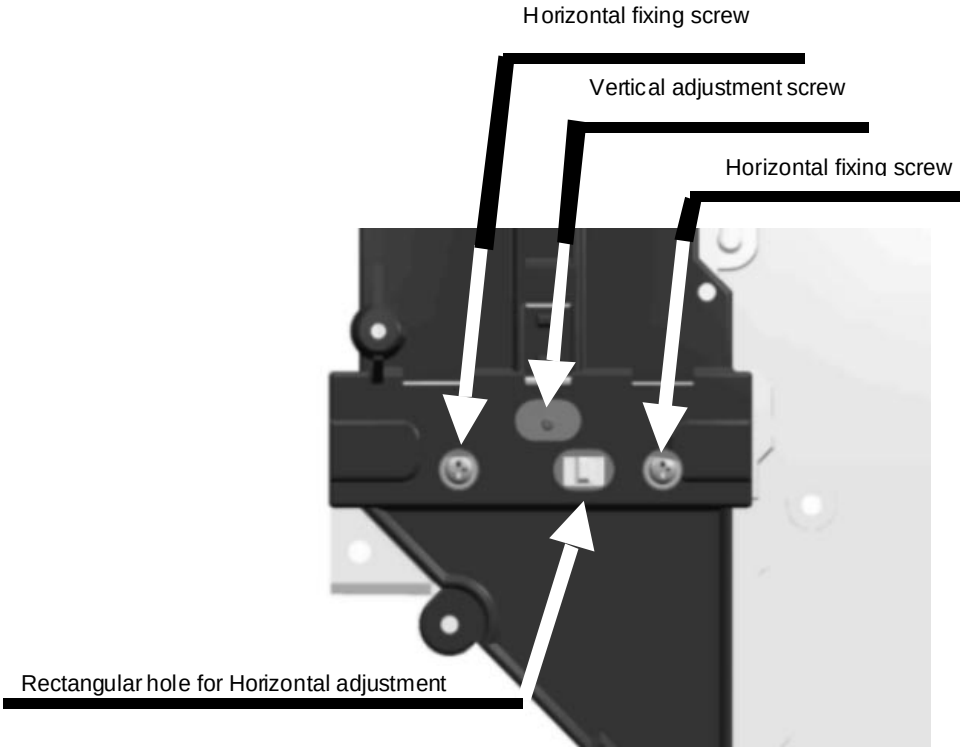


Fig. 4 FL Adjusting Block Details

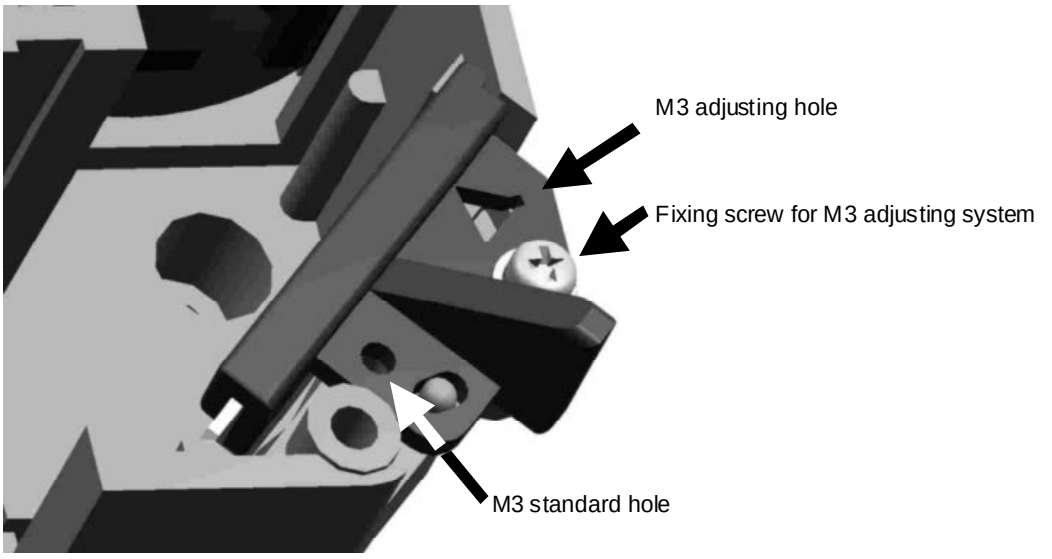


Fig. 5 Mirror Adjusting Block Details

2. Adjustment of polarizing plate

No adjustment of polarizing plate is needed here.
If the polarizing plate is broken (example: it was broken during the replacement of the junction unit), however, the polarizing plate ASSY must be replaced.
In this case, the fixing screws specified below should be fixed in the center of the oblong holes.

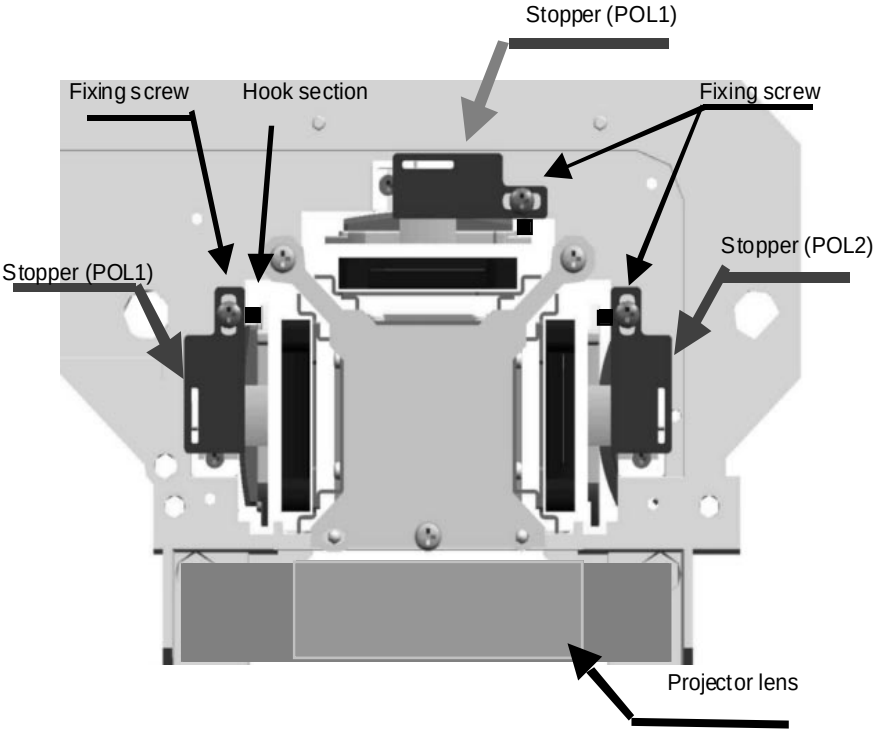


Fig. 6 Polarizing Plate Adjusting Block Details

CIRCUIT DESCRIPTION

1. MAIN input block

The video signal from the I/O board passes through the LPF circuit, and it is then amplified and its DC level is set up at the video amplifier (IC3404). The resultant output signal is then entered in the A/D circuit (IC3409 to 3411). At that time, the input signal is switched over to the LPF side in the LPF circuit when it is for the higher definition. In the video amplifier, on the other hand, the signal is set up according to each input signal (VIDEO, COMPONENT, RGB).

Regarding the thermal drift in the video amplifier, the temperature-borne drift in the DC level is compensated for by the thermistor (TH3401). LPF circuit changeover and video amplifier adjustment are conducted by controlling the serial D/A circuit (IC3401: M62398FP) in terms of I2C.

2. PLL block

The PLL loop block is composed of the ENDEAVOR (IC3606) that is an LSI used for signal processing, the loop filter (IC3602: OP-Amp), the VCO (IC3651), and the A/D (IC3409).

The function of this PLL block is that a VCO signal is generated by oscillation with the control signal that has been produced at the loop filter based on the HD phase comparison signal (a self-HD signal generated on the basis of a clock signal produced at the input HD and VCO) from the ENDEAVOR, the generated VCO output signal is entered in the A/D circuit as its clock input, and the clock output signal from the A/D circuit is entered in the ENDEAVOR.

3. HD phase adjustor block

By adjusting the HD phase, the phase is adjusted for the clock signal that is generated at the PLL block.

This circuit is composed of the comparator (IC3604) and the LPF that uses the INV (IC3603). The phase is changed by changing the threshold voltage of the comparator.

The phase of the HD itself can be shifted by temperature at the sync separation IC (IC1602: I/O block). Therefore, for the purpose of compensation for such a thermal drift, the threshold voltage is controlled by the thermistor (TH1601) located adjacent to the sync separation IC.

The threshold voltage is controlled by regulating the I2C value at the serial D/A (IC3401: M62398FP).

4. Digital signal processor block

The signal (8 bits X 3) digitized at the A/D is entered in the ENDEAVOR (IC3606) that is used as a signal processing LSI. After frequency and definition conversion at the ENDEAVOR, the resultant signal is attached with an on-screen feature, and is then output to the UNITY (IC3701) that is a G/A for LC timing signal generation. These ENDEAVOR functions are secured by the use of a frame memory consisting of a built-in SDRAM.

5. Microcomputer block

The microcomputer block is composed of a CPU (IC3105: V831) that is a core component, the SRAM (IC3101 to 3104), FLASH-ROM (IC3107 to 3109), CHARA2 (IC3202) that is a port G/A, SUB-CPU (IC3204), and the BRACE (IC3301) that is a buffer G/A for the viewer.

In the FLASH-ROM, programs and data are installed. Port I/O exchange for various control signals, etc., is performed at the CHARA2. Remote control and key input are carried out at the SUB-CPU.

6. Output LC driver block

6-1. RGB video signal

The respective RGB 10-bit digital video signals (3.3Vp-p each) output from the signal processing G/A, UNITY (IC3701) for the LC panel on the MAIN board (MAIN-PWB) are put into 6/12 phase decode processing by the exclusively installed phase decoding ICs (IC3801, 3802, 3803, 3804, 3805, 3806) and their levels are adjusted [10.0Vp-p (2.0V/12.0V)] by the serial D/A (IC3809). Since then, the processed signals are fed to the LC panel via the LC driver board (LCEP-PWB).

6-2. Panel driving signal

The panel drive timing signal (3.3Vp-p) output from the signal processing G/A, UNITY (IC3701) for the LC panel on the same MAIN board (MAIN-PWB) is shifted to the level (15.5Vp-p) required to drive the shift register in the LC panel by the exclusively installed level shifting ICs (IC5501, 5502, 5503) located on the LC driver board (LCEP-PWB). The resultant signal is fed to the LC panel.

6-3. Panel aux. signal

The panel aux. signal (3.3Vp-p) output from the signal processing G/A, UNITY (IC3701) for the LC panel on the same MAIN board (MAIN-PWB) is shifted to the level [10.0Vp-p (2.5V/7.5V)] required to pre-charge the video line in the LC panel by the exclusively installed level shifting ICs (IC5501, 5502, 5503) located on the LC driver board (LCEP-PWB). The resultant signal is fed to the LC panel via the diamond buffer consisting of a group of composite transistors.

6-4. Interface between MAIN and LCEP

P0XV	
Pin No.	Signal name
1	AGND
2	AGND
3	VIDR/2
4	VIDR/4
5	VIDR/6
6	VIDR/8
7	VIDR/10
8	VIDR/12
9	VIDR/1
10	VIDR/3
11	VIDR/5
12	VIDR/7
13	VIDR/9
14	VIDR/11
15	AGND
16	VIDG/2
17	VIDG/4
18	VIDG/6
19	VIDG/8
20	VIDG/10
21	VIDG/12
22	VIDG/1
23	VIDG/3
24	VIDG/5
25	VIDG/7
26	VIDG/9
27	VIDG/11
28	AGND
29	VIDB/2
30	VIDB/4
31	VIDB/6
32	VIDB/8
33	VIDB/10
34	VIDB/12
35	VIDB/1
36	VIDB/3
37	VIDB/5
38	VIDB/7
39	VIDB/9
40	VIDB/11

P0XT	
Pin No.	Signal name
1	DGND
2	DY
3	CLY
4	NRG
5	NRC
6	D+5V
7	DGND
8	DX
9	CLX
10	ENB1R
11	ENB2R
12	DGND
13	ENB1R
14	ENB2R
15	ENB1R
16	ENB2R
17	D+5V
18	DGND
19	SHENB
20	SHCLP
21	ENBY1
22	ENBY2
23	DGND
24	A–5V
25	DIRY
26	DIRX
27	SCLX
28	D+5V
29	SDATA
30	DGND

6-5. List of I²C control ICs (Output block)

Item name	Circuit symbol	Function	Slave address	Remarks
M62398FP	IC3809	Serial D/A	96H	Output video level adjustment
M62398FP	IC5005	Serial D/A	92H	Flicker adjustment

6-6. Interface with LC panel

SVGA panel	
P0RS/GS/BS	
Pin No.	Signal name
1	DY
2	CLY
3	$\overline{\text{CLY}}$
4	VDDY
5	NRG
6	DIRY
7	LCCOM
8	EMB1
9	ENB2
10	DIRX
11	CLX
12	$\overline{\text{CLX}}$
13	DX
14	VDDX
15	NC
16	NC
17	VSSX
18	VID1
19	VID2
20	VID3
21	VID4
22	VID5
23	VID6
24	VSSX
25	LCCOM
26	NRS1
27	NRS2
28	VSSY
29	VSSY
30	DY

XGA panel	
P0RX/GX/BX	
Pin No.	Signal name
1	DY
2	$\overline{\text{CLY}}$
3	CLY
4	VDDY
5	NRS2
6	NRS1
7	LCCOM
8	VID11
9	VID9
10	VID7
11	VID5
12	VID3
13	VID1
14	VSSX
15	$\overline{\text{CLX}}$
16	CLX
17	DX
18	VDDX
19	$\overline{\text{DIRX}}$
20	DIRX
21	ENB2
22	ENB1
23	VSSX
24	VID2
25	VID4
26	VID6
27	VID8
28	VID10
29	VID12
30	LCCOM
31	NC
32	NRG
33	DY
34	DIRY
35	$\overline{\text{DIRY}}$
36	VSSY

6-7. Circuit configuration

6-7-1. Board configuration

- MAIN-PWB : Phase decode processing for RGB video signals, level adjustment, and generation of various timing signals
- LCEP-PWB : Level shifting for panel drive timing signals and generation of panel aux. signals
- The above-mentioned two types of boards are connected through the FFC (Flexible Flat Cable) cables of the 40-core (POXV) and 30-core (POXT) types.

6-7-2. Output signals

Signal levels:

- RGB video signal : 10.0Vp-p (2.0V/12.0V)
- Panel driving signal : 15.5Vp-p (0.0V/15.5V)
- Panel aux. signal : 5.0Vp-p (2.5V/7.5V)

Driving panel:

- SVGA : Model 1.3 LC panel made by EPSON (P13SG110/120)
- XGA : Model 1.3 LC panel made by EPSON (P13XG110/120)

7. I/O block

7-1. Video signal processor block

The composite video signal passes through the AV switch (IC1101: CXA2089Q), and is then sent to the 3-line Y/C separator circuit (IC1301: TC9090AF). The Y/C-separated signal returns to the AV switch again, and its input is then entered in the video decode circuit (IC1401: CXA2139S) after the selection for the S-video input signal. The video decode IC has two input systems. The COMPOSITE SECAM signal and the B/W signal are directly entered in the video decode IC from the AV switch, without being passed through the 3-line Y/C separator circuit.

The result of color system/vertical frequency judgment and others to be performed at the video decode IC is supervised at the CPU through the I^2C bus. Based on this result, the CPU controls the 3-line Y/C separator IC, video decode IC, and the serial D/A (IC1502: CXA1315M) to their proper setting values through the I^2C bus.

In the video decode IC, sharpness control is effected for the Y signal and phase compensation is conducted for the color-difference output signal. In addition, Y/C separation is also carried out for the COMPOSITE SECAM signal by the use of BPF & TRAP.

Also in the video decode IC, the amplitude is controlled for the color difference signal that is one of the signals decoded in conjunction with the Y/color difference (demodulation angle: 90 degrees). Therefore, this color difference signal is sent to the HUE/COLOR control IC (IC1403: CXA2039M). In this IC, another operation is also carried out, such as changeover to the component video Cb/Cr signal of DVD, etc., and phase control. After passing through these processes, the Y/Cb/Cr signals are delivered to the RGB signal changeover block.

The sync signal contained in the Y signal selected by the switch for the video decode IC passes through the horizontal/vertical sync separator circuits, copy guard mask circuit, AFC circuit, the mono-multi circuit with an externally mounted IC, and others in the IC. Since then, this signal is sent to the sync signal processor block at the next stage, to be used as the H.V timing pulses.

7-2. RGB signal changeover block

The RGB input signals coming in two systems are selected at the RGB input changeover IC (IC1001: M52758FP). Their output is sent to the changeover circuit for the signals fed from the video signal processor circuit at the next stage. The G signal only is also sent to the sync processor circuit for Sync on Green operation.

Both RGB and video signals are selected at the input changeover IC (IC1051: M52758FP). They are then sent to the MAIN board through the buffer.

7-3. Component signal processing

The component signal input fed from the RGB terminal is treated to pass through a different route according to its signal type. The component video signal of DVD, etc., is once delivered to the video signal processor circuit, and processed for sync processing, sharpness control, and phase compensation. Other HDTV component signals are not processed and immediately sent to the MAIN board via the input changeover IC. The Y signal is also sent to the sync processor circuit in the same manner as for the G-Sync.

7-4. Sync signal processor block

The respective sync signals of RGB1, RGB2, and VIDEO are selected at the changeover IC (IC1601: UPC4052), and are then sent to the amplitude limiter circuit. In this amplitude limiter circuit, the H/V sync signals are limited to 0.6Vp-p and then entered in the sync signal processing IC (M52347FP).

The Sync on Green signal input is entered in the sync signal processing IC via the sync chip clamp circuit and the 6dB AMP circuit in order to cope with the sync attenuated signals.

In the sync signal processing IC, the following operation is carried out:

- Discrimination for the presence of H/V sync
- Discrimination for the polarity of H/V sync
- Sync separation for the composite Sync
- Sync separation for the G-Sync
- Generation of clamp pulses
- H/V sync output

The result of judgment is sent to the CPU, after reading it out at the serial D/A (IC1503: CXA1315).

Regarding the clamp pulses, the pulse width and the pulse position are switched over by the use of the mono-multi (IC1603: 74HC4538). This control is also conducted by the same serial D/A (IC1503).

7-5. Audio signal processing

All audio signals are switched over by the use of the function of the AV switch IC1101 (CXA2089Q) used in the video system. The composite video and S-video have the audio terminal of System 1 in common. Therefore, the following controls are carried out, utilizing the changeover functions of the two systems that are provided to the AV switch:

- S-video cable not connected : COMPOSITE stereo input (applicable to Terminal L mono input)
- S-video cable connected : Terminal L is for S; Terminal R is for mono input for COMPOSITE)

The audio signal output from the AV switch is sent to the VOLUME control incorporated stereo output amplifier IC1505 (AN7512SH) through the buffer.

The audio signals controlled for their volume are output (MAX: 1W + 1W) to the speakers (8Ω X 2).

7-6. Interface with the MAIN

Pin No.	Signal name		Pin No.	Signal name
2	GND		1	REMOTE
4	AUD GND		3	AUD GND
6	VC5AUD		5	VC5AUD
8	GND		7	GND
10	VC5ANA		9	VC5ANA
12	GND		11	GND
14	VC12ANA		13	VC12ANA
16	SDA		15	GND
18	SCL		17	TH
20	GND		19	CLAMP
22	GND		21	VD
24	GND		23	HD
26	GND		25	B/CB
28	GND		27	G/Y
30	GND		29	R/CR
32	GNDD		31	GNDD
34	EXT3		33	SIGRET
36	EXT2		35	SIG
38	EXT1		37	GNDD
40	RXD		39	VC5SBY
42	TXD		41	VC5SBY
44	VCCPC		43	MOUSE3
46	MOUSE8		45	MOUSE2
48	MOUSE7		47	MOUSE1
50	MOUSE6		49	GND

7-7. List of I²C control ICs (I/O block)

Item name	Circuit symbol	Function	Slave address	Remarks
CXA2089Q	IC1201	AV switch	90H/91H	
CXA1315M	IC1801	Serial D/A	40H	Signal changeover control, etc.
CXA1315M	IC1802	Serial D/A	42H/43H	Sync control, etc.
CXA2139S	IC1401	Video decode	8AH/8BH	
TC9090AF	IC1302	Y/C separation	B2H	

7-8. I/O terminals

7-8-1. Video input

- RCA PHONO terminal (1 system) for COMPOSITE VIDEO signal input
- S-video input terminal (1 system) applicable to the S2 Standard
- Mono-applicable stereo audio input RCA PHONO terminal (1 system) for COMPOSITE VIDEO signal (Terminal L for S input in S-input connection; Terminal R for COMPOSITE)

7-8-2. RGB input (Applicable to component input through conversion cables)

- Mini-D-SUB 15-pin (2 systems)
  (RGB1 applicable to PLUG & PLAY)
- Stereo mini-jack for audio input (for one system each)

7-8-3. REMOTE CONTROL input

- Stereo mini-jack (for one system)

7-8-4. PC CONTROL terminal

- Mini-DIN-8P (1 system)
- Applicable to external control

7-8-5. MOUSE OUTPUT terminal

- Mini-DIN-8P (1 system)

7-9. Input signals

7-9-1. Signal level

- COMPOSITE VIDEO : 0.7Vp-p/75Ω
- S-VIDEO input : 1.0Vp-p/75Ω (Y signal), 0.28Vp-p/75Ω (C signal burst level)
- RGB signal : 0.7Vp-p/75Ω
- Sync signal : TTL level (positive/negative) / 1kW
- COMPONENT signal : 1.0Vp-p/75Ω (Y signal), 0.7Vp-p/75Ω (Cb/Cr, Pb/Pr signals)
- Audio signal : 0.5Vrms/47kW

7-9-2. Color system applicable to video input

- NTSC3.58
- NTSC4.43
- PAL
- PAL-60
- SECAM
- B/W60, B/W50 (B/W: Black & white signal without burst)

7-9-3. Scanning frequency applicable to RGB signal

- Horizontal: 15 to 85kHz
- Vertical: 50 to 85kHz

7-9-4. Component signal

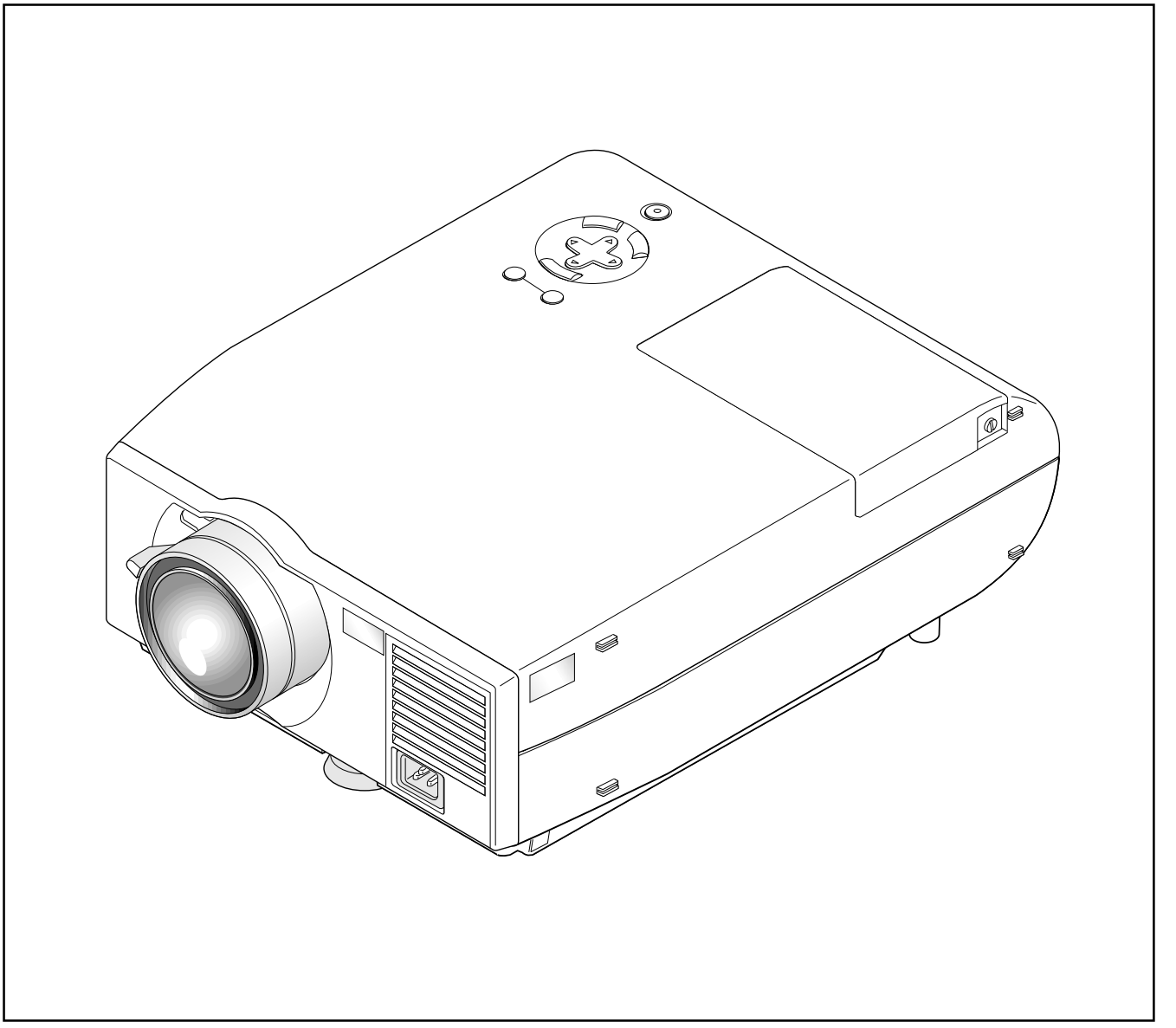
- COMPONENT VIDEO Y/Cb/Cr signals (DVD output signals)
- HDTV 720p signal, 1080i signal, 480p signal

7-9-5. Output signals (To MAIN PWB)

- RGB (COMPONENT) signal output : 0.7Vp-p
- HD, VD, clamp pulse signal output : 5.0Vp-p (positive polarity)

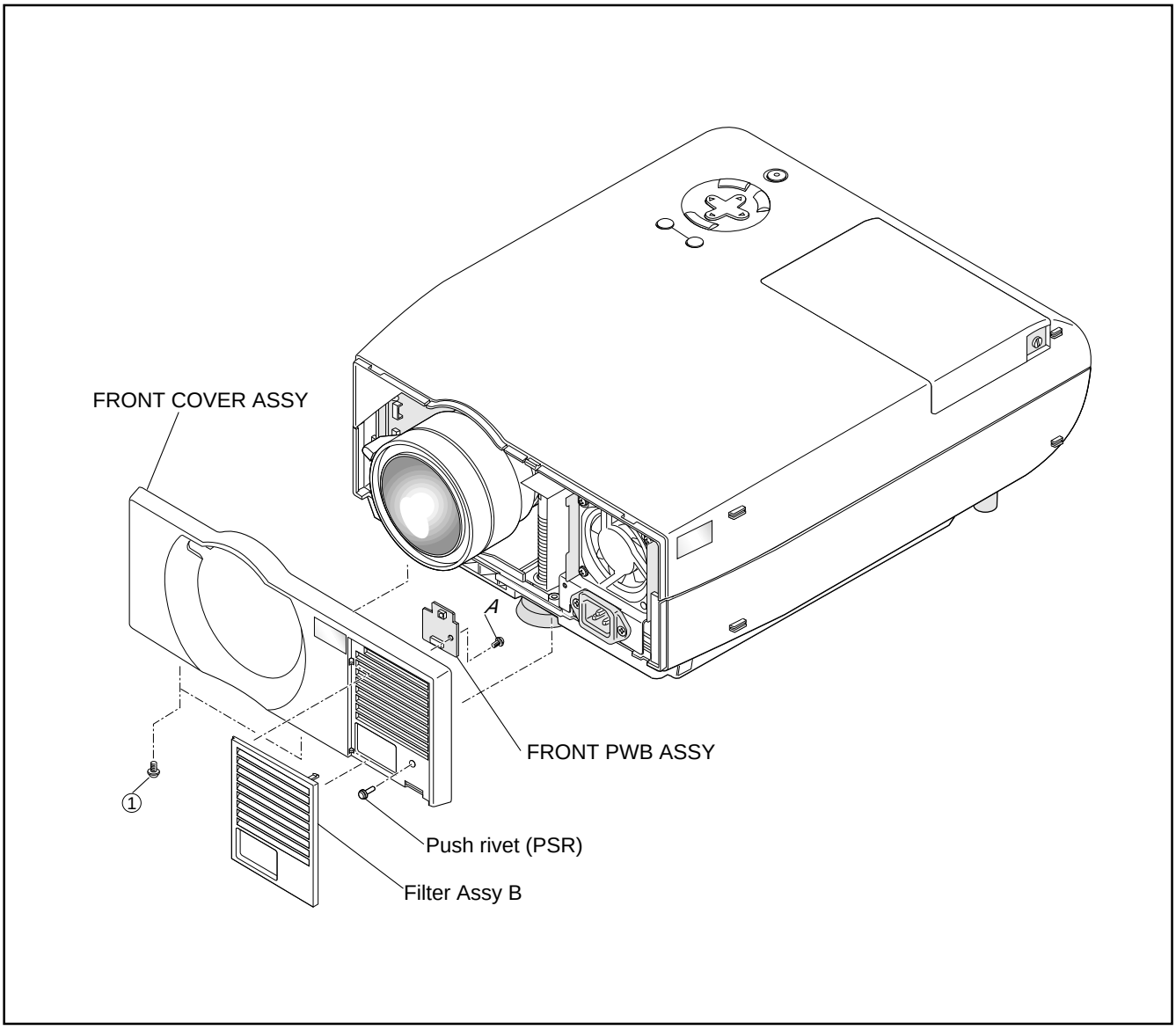
METHOD OF DISASSEMBLY

1. Diagonal view of the main unit front



2. FRONT COVER ASSY/FRONT PWB ASSY/FILTER ASSY B/RIVET, PUSH (PSR)

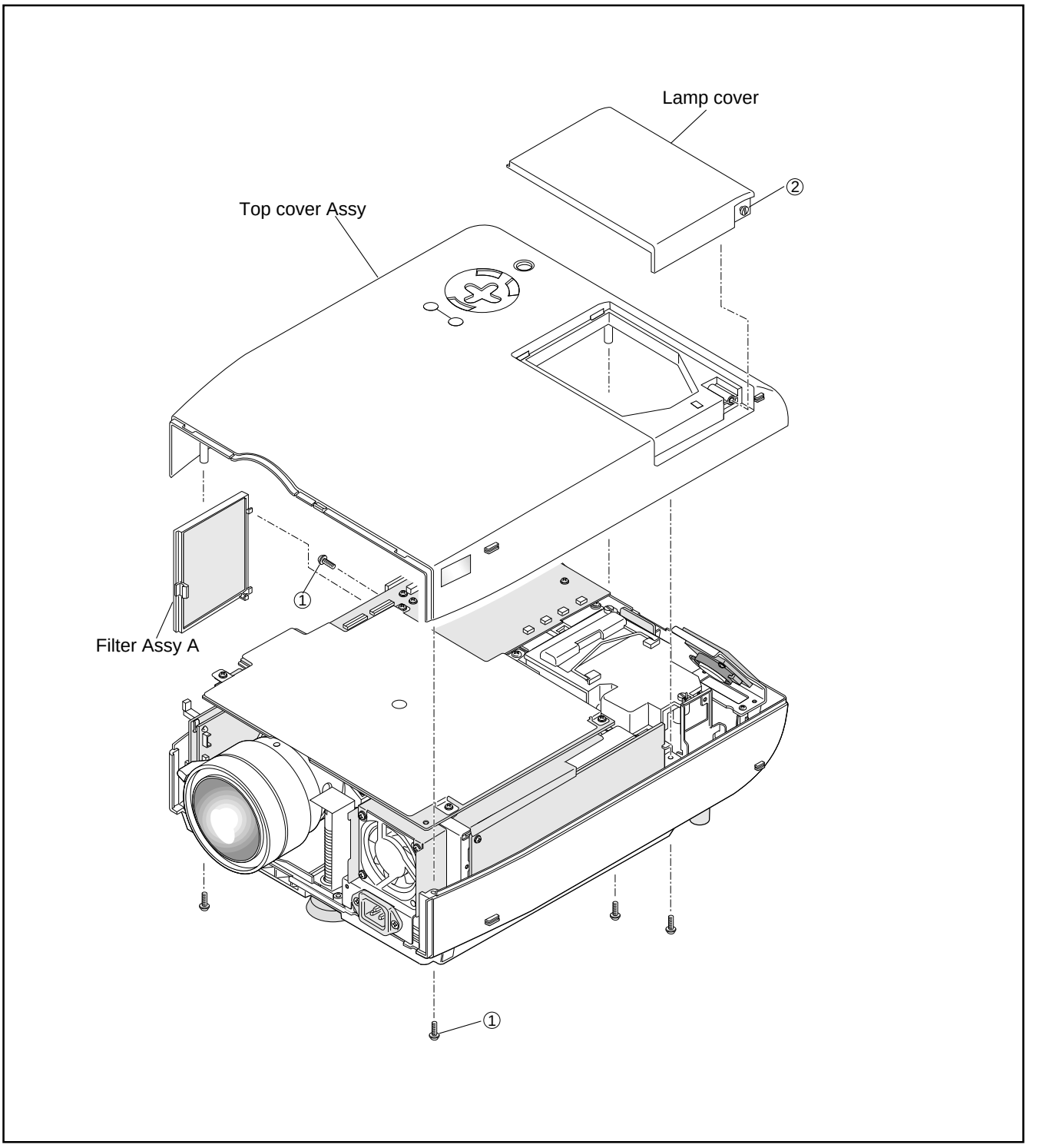
(1) Remove the two screws ①, and take out the FRONT COVER ASSY.
(2) Remove the one screw ②, and take out the FRONT PWB ASSY.
(3) Remove the FILTER ASSY B/RIVET, PUSH (PSR) from the FRONT COVER ASSY.



3. LAMP COVER ASSY/TOP COVER ASSY/FILTER ASSY A

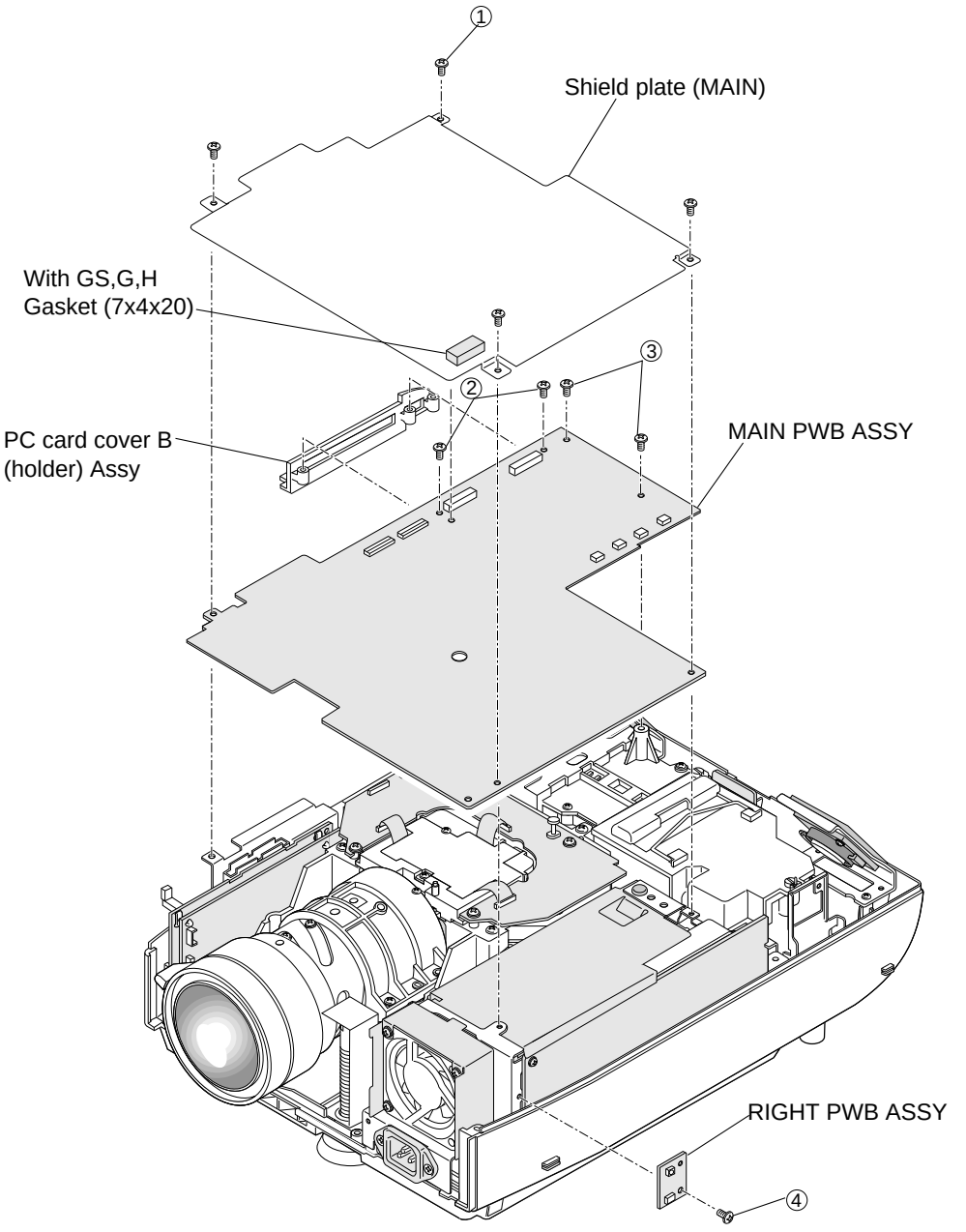
(1) Remove the five screws ①, and take out the TOP COVER ASSY and the FILTER ASSY A.

(2) Loosen the one screw ②, and take out the LAMP COVER ASSY.



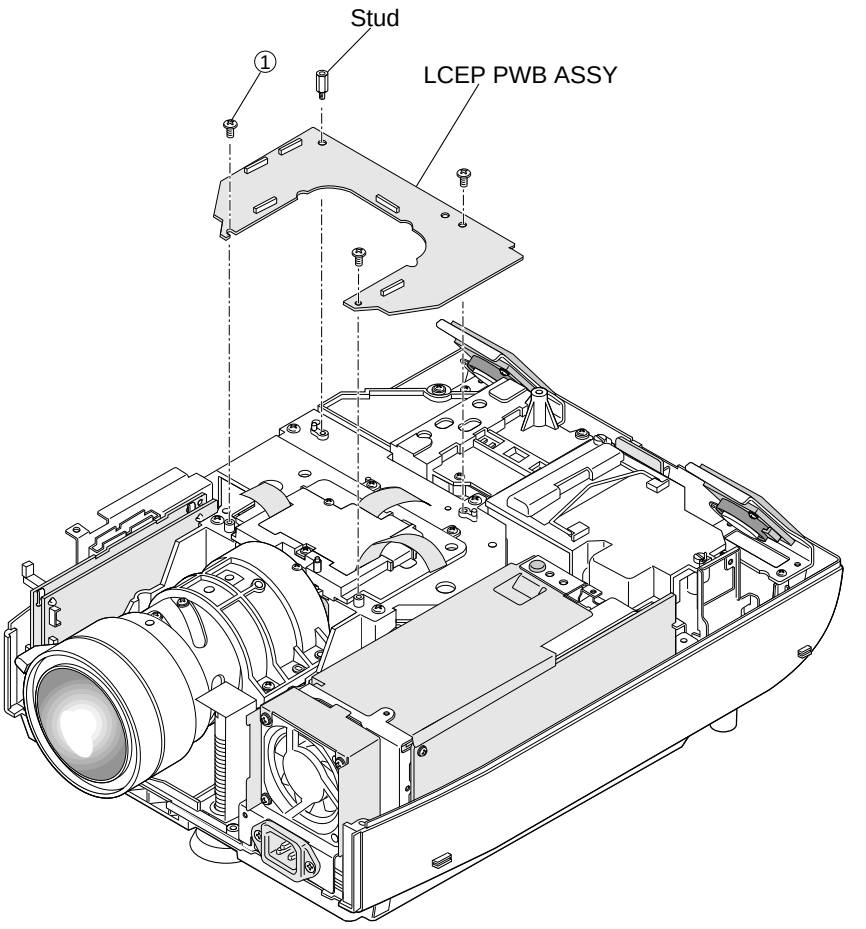
4. MAIN PWB ASSY/RIGHT PWB ASSY/PC CARD COVER B ASSY/SHIELDING PLATE (MAIN)

(1) Remove the four screws ①, and take out the SHIELDING PLATE (MAIN).
(2) Remove four each of the screws ② and the screws ③, and take out the MAIN PWB ASSY and the PC CARD COVER B ASSY.
(3) Remove the one screw ④, and take out the RIGHT PWB ASSY.



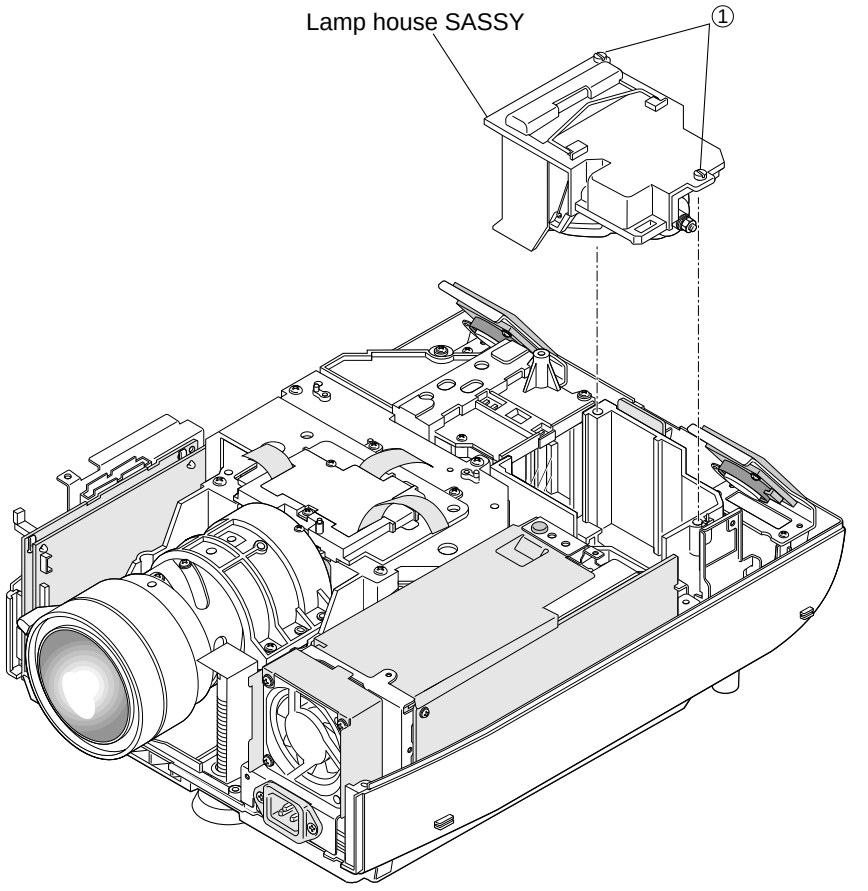
5. LCEP PWB ASSY

(1) Remove the two screws ① and the studs, and take out the LCEP PWB ASSY.



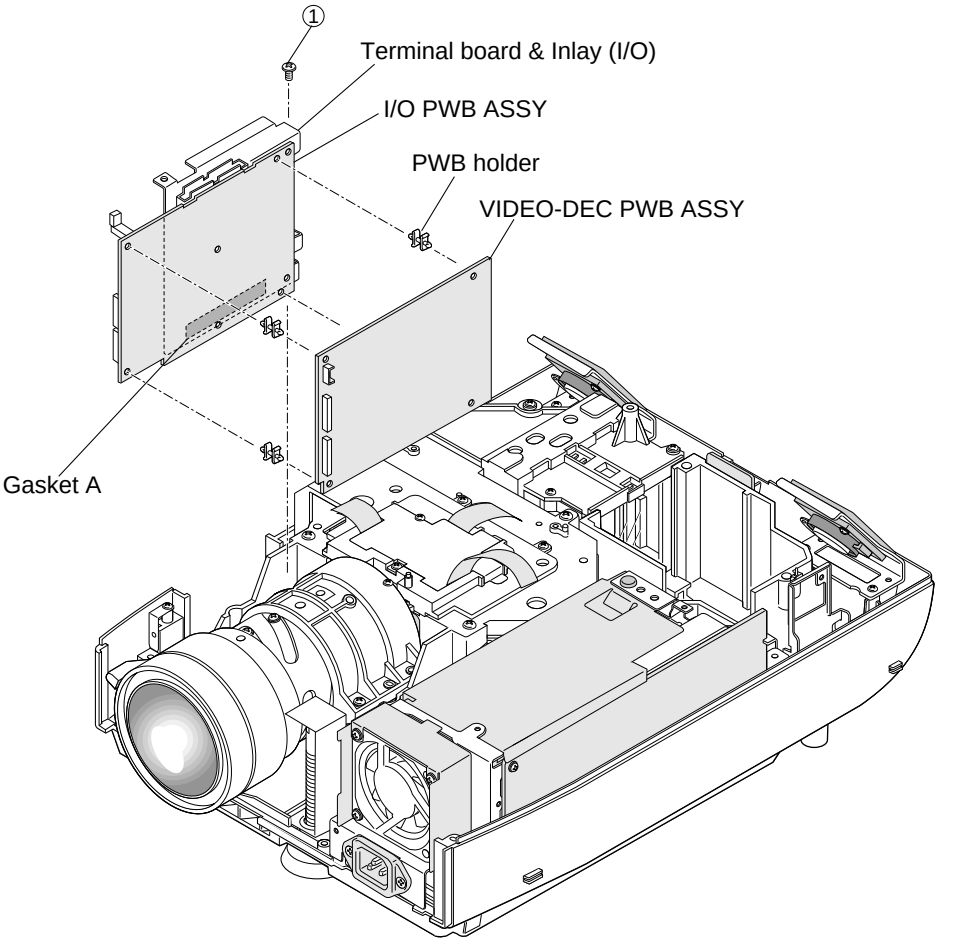
6. LAMP HOUSE SASSY

(1) Loosen the two screws ①, and take out the LAMP HOUSE SASSY.



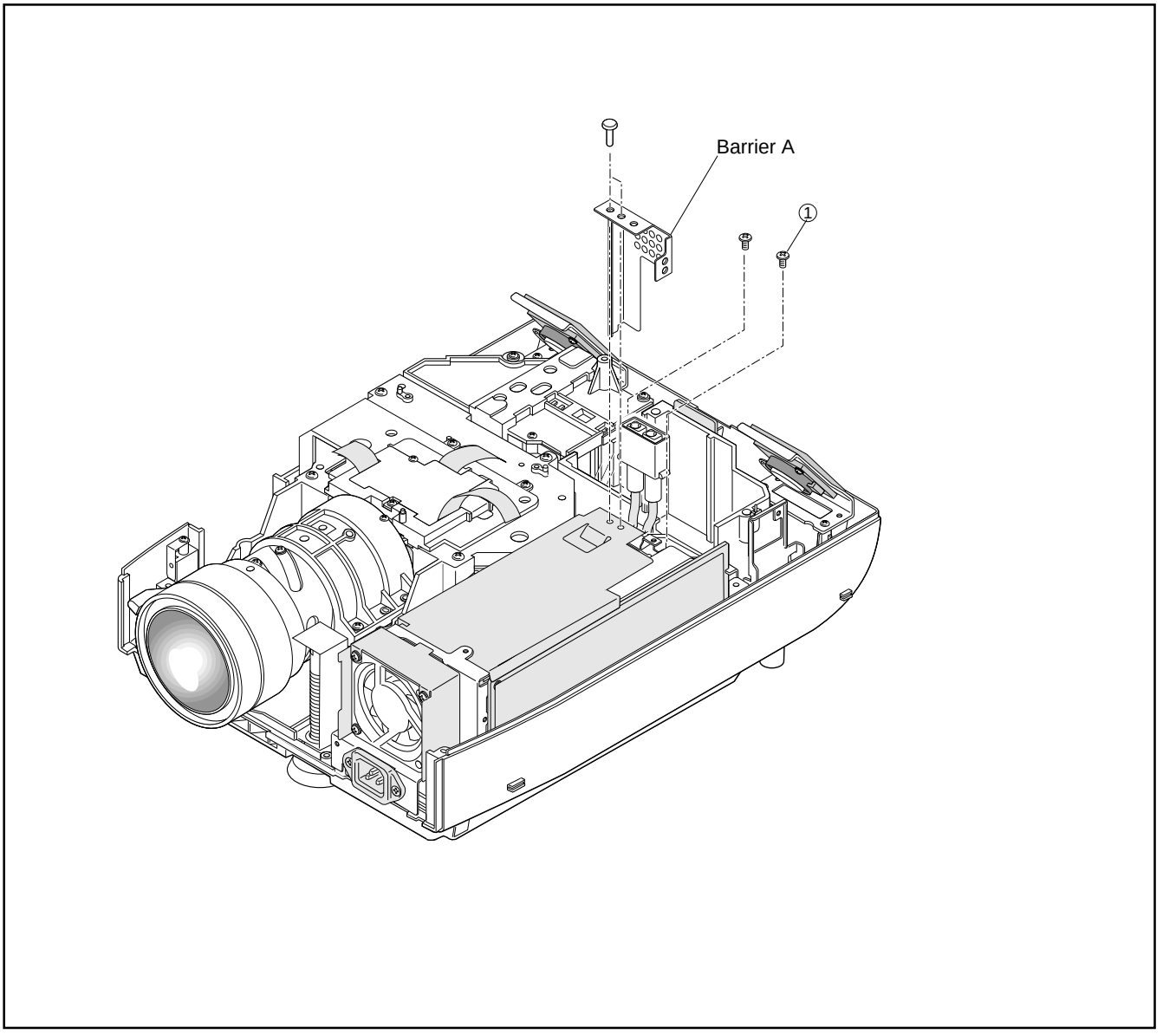
7. VIDEO-DEC PWB ASSY/I/O PWB ASSY/TERMINAL BOARD AND INLAY (I/O)/ PWB HOLDER

(1) Remove the one screw ①, and take out the VIDEO-DEC PWB ASSY, I/O PWB ASSY, TERMINAL BOARD, and INLAY (I/O).



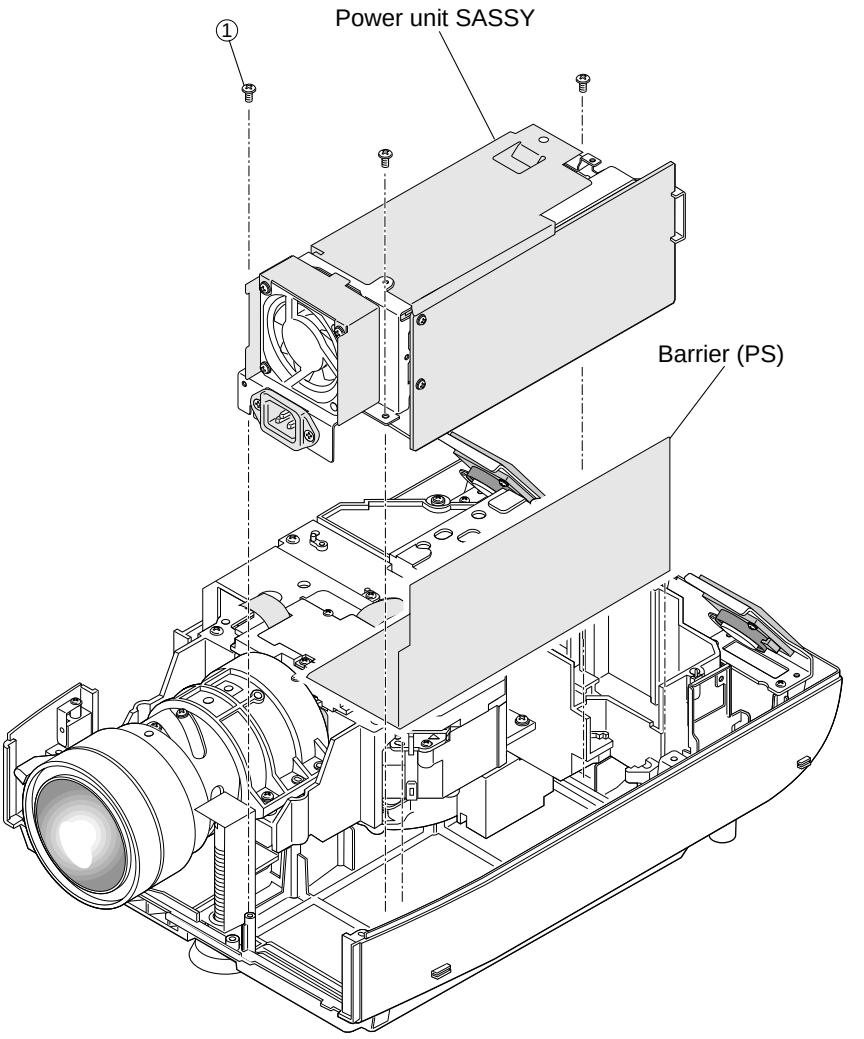
8. BARRIER A

(1) Remove the three screws ①, and take out the BARRIER A.

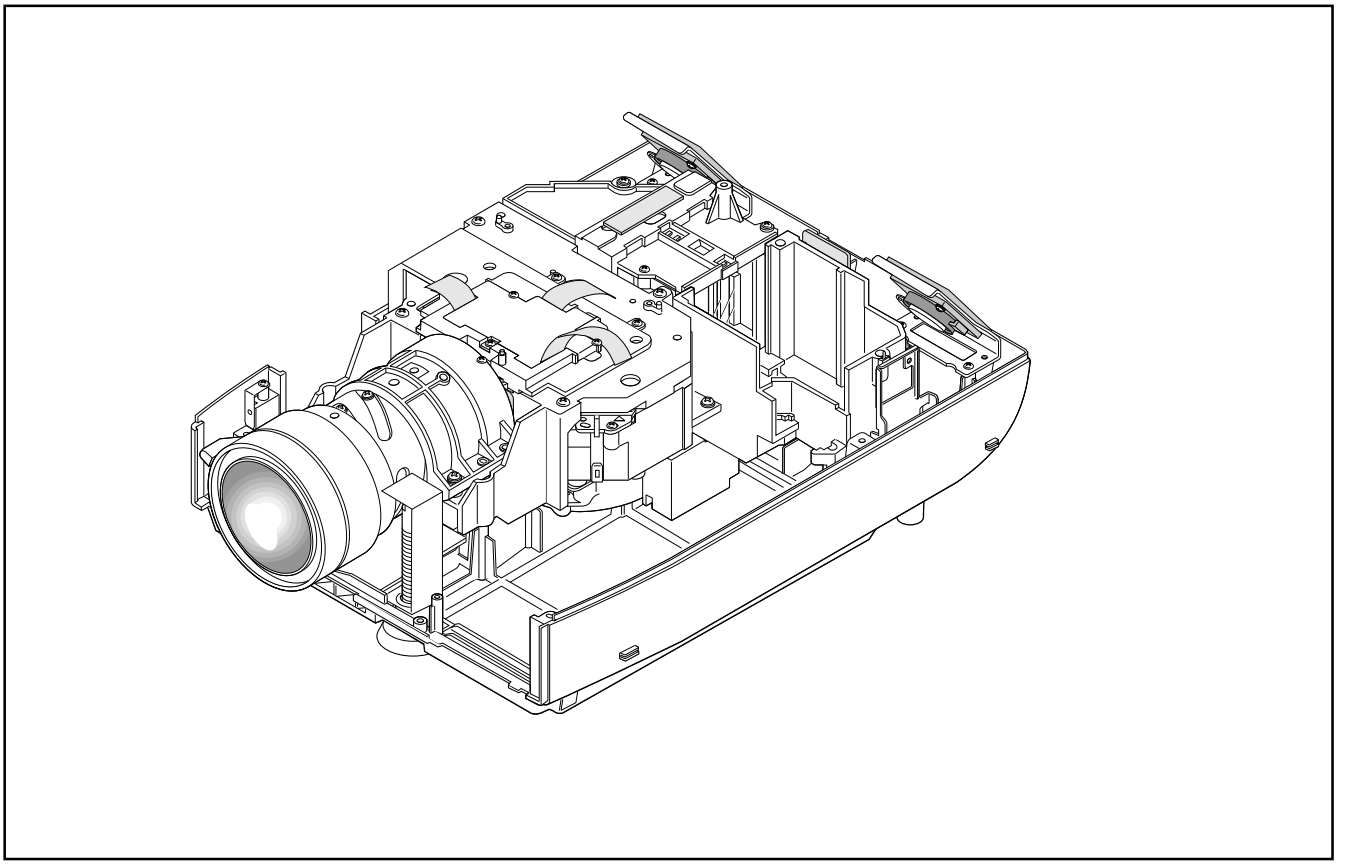


9. PS UNIT SASSY/BARRIER (PS)/BARRIER (F FOOT)

(1) Remove the three screws ①, and take out the PS UNIT SASSY, BARRIER (PS), and BARRIER (F FOOT).

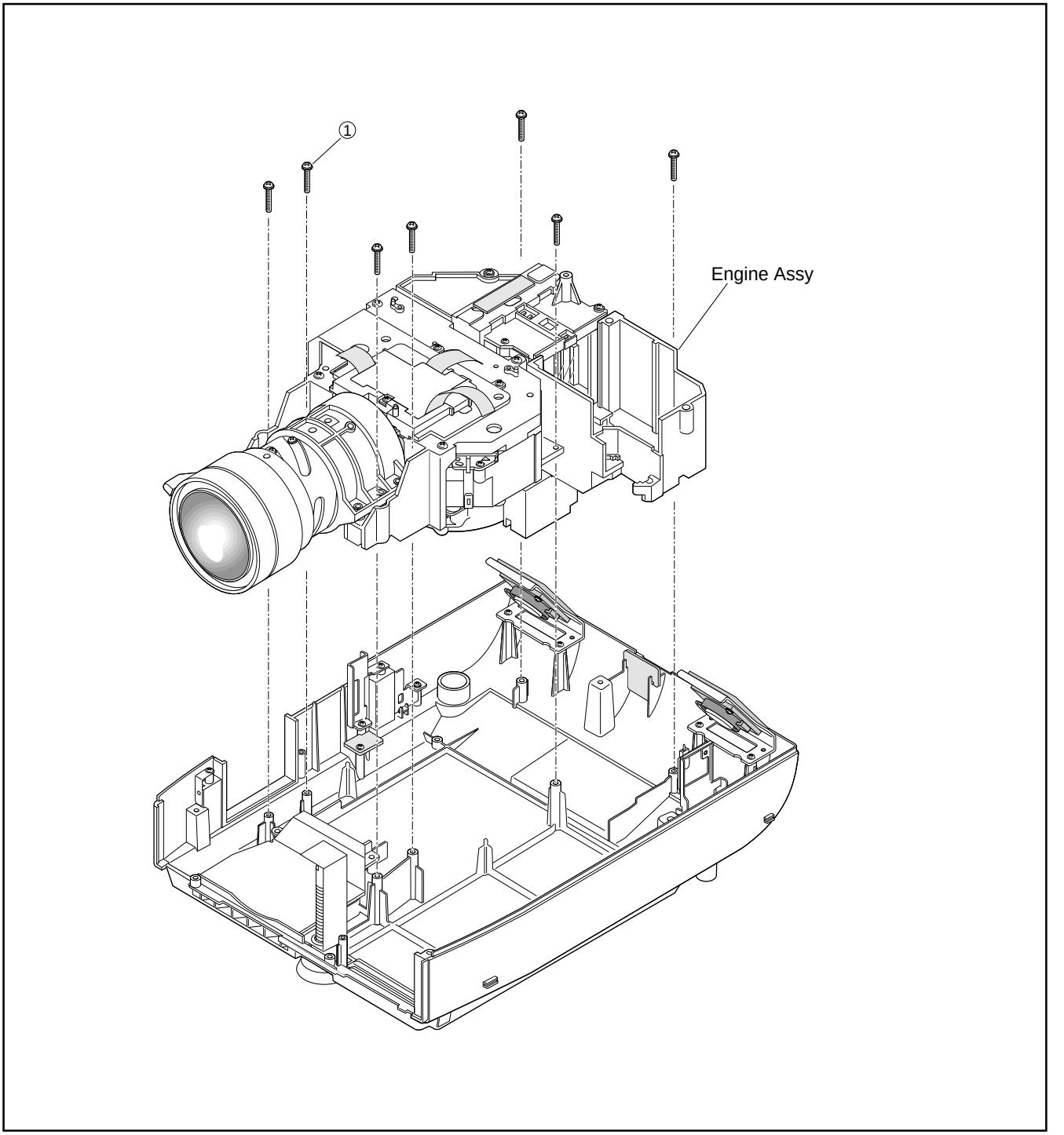


10.ENGINE ASSY/BOTTOM COVER SASSY

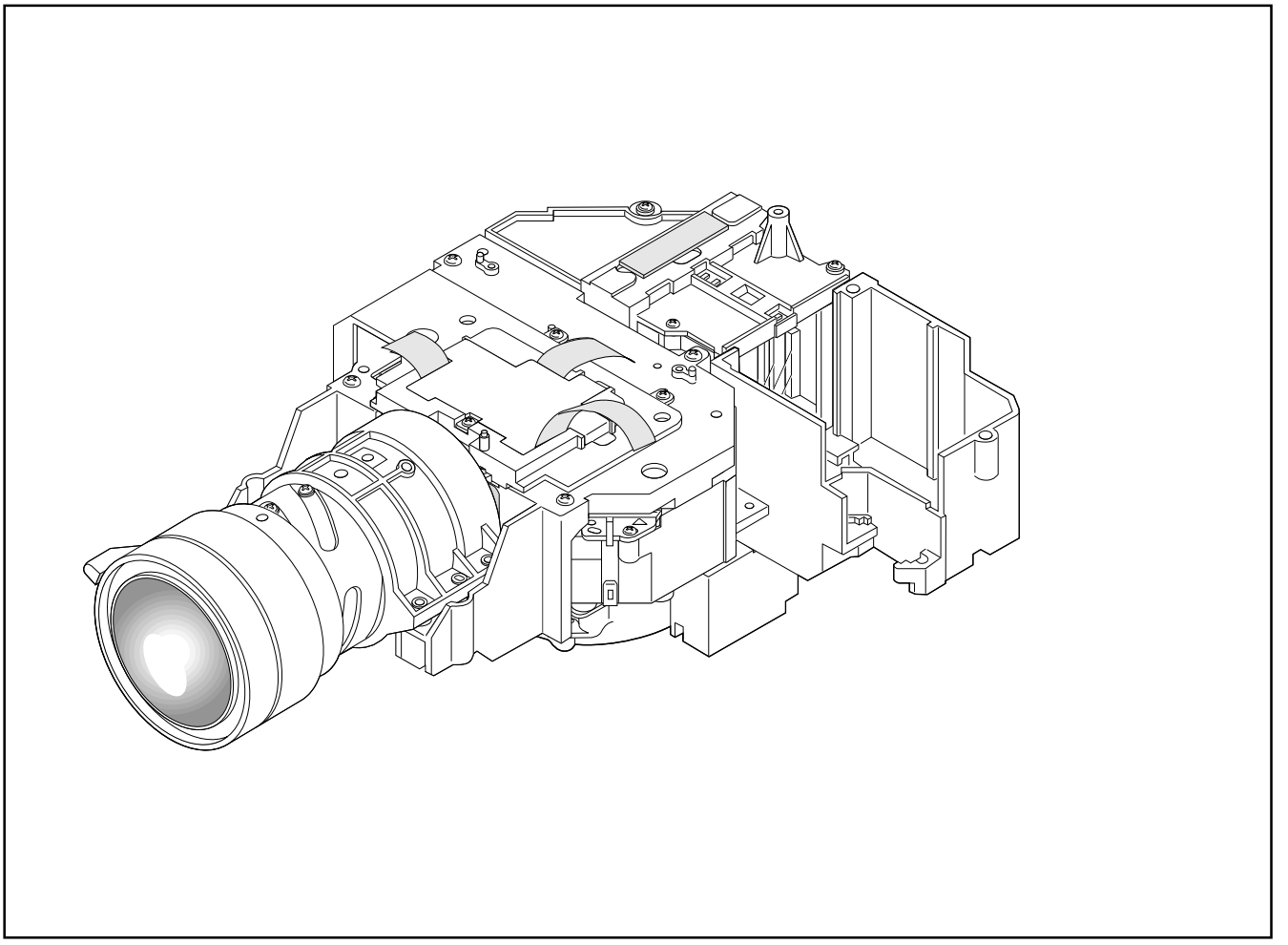


11. ENGINE ASSY

(1) Remove the seven screws ①, and take out the ENGINE ASSY.

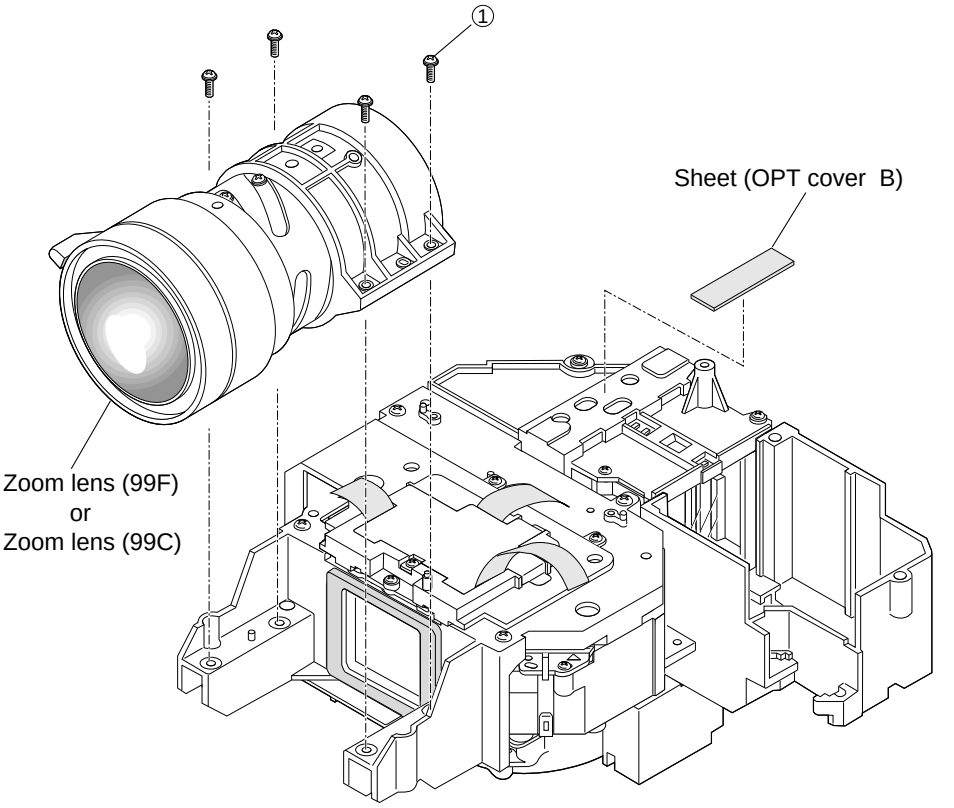


12.ENGINE ASSY



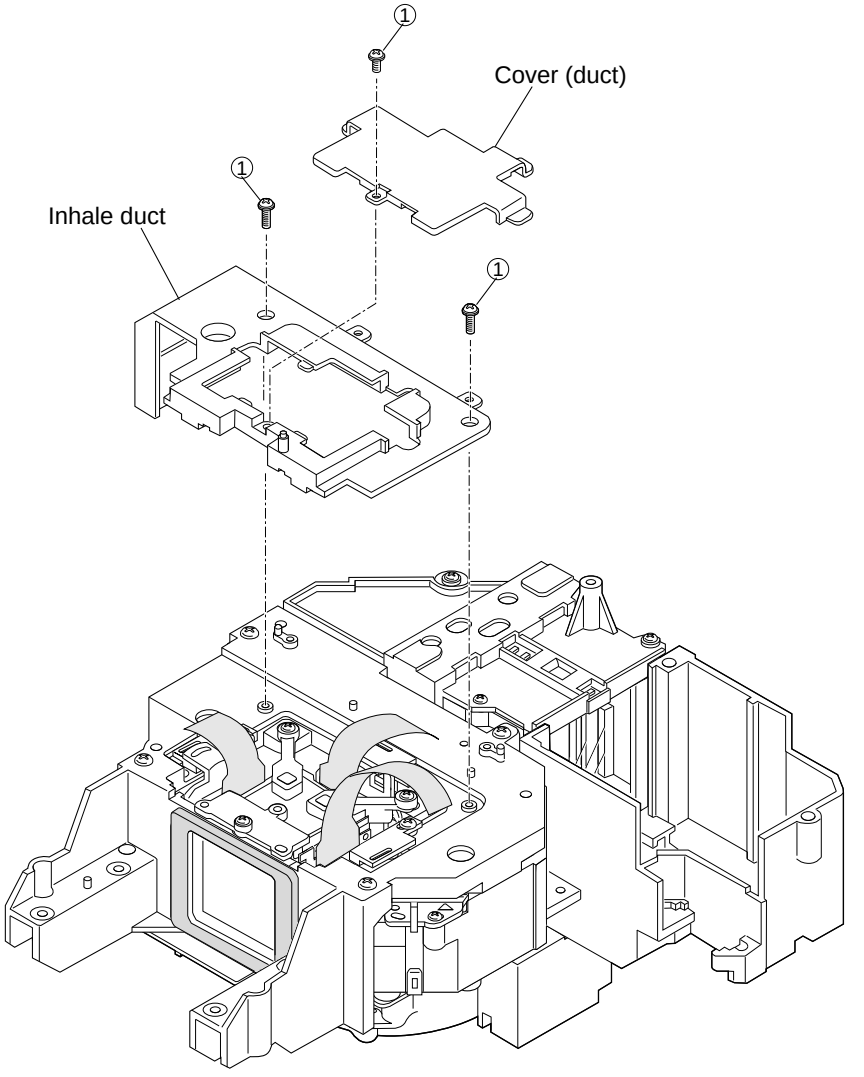
13.ZOOM LENS/SHEET COVER OPT B

(1) Remove the four screws ①, and take out the ZOOM LENS.



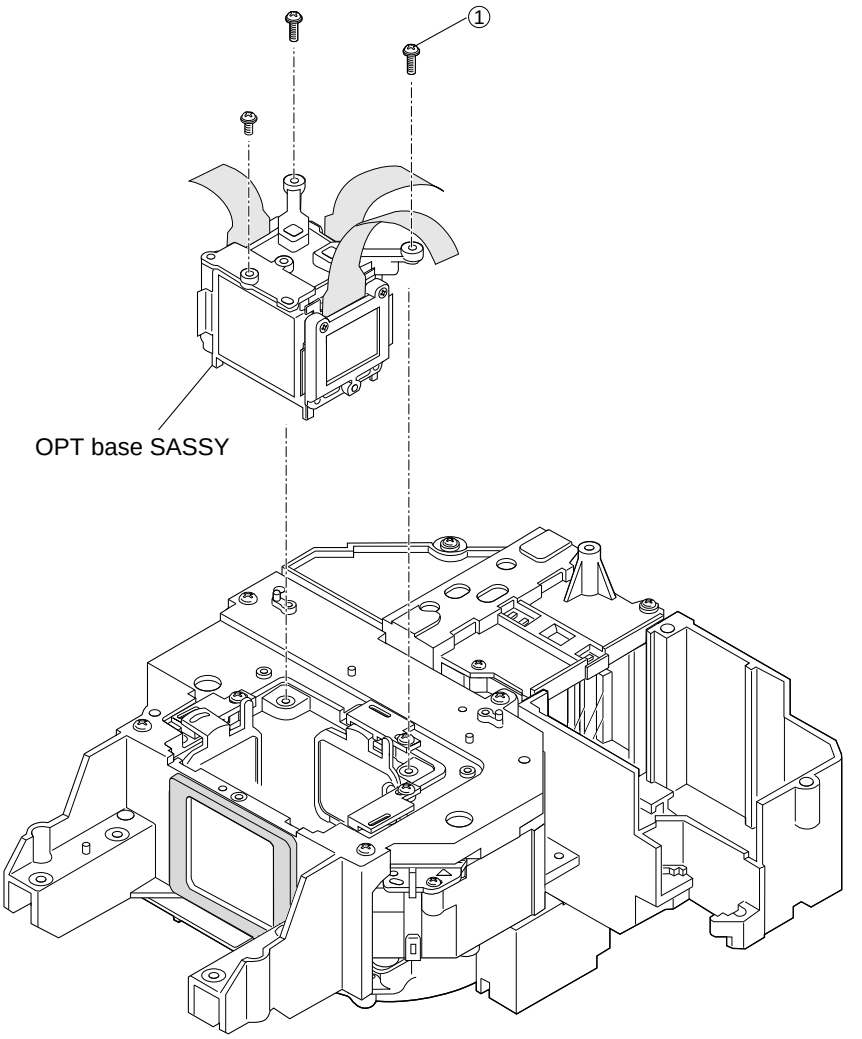
14.INHALE DUCT/COVER (DUCT)

(1) Remove the three screw ① and take out the INHALE DUCT and the COVER (DUCT).



15.OPT BASE SASSY

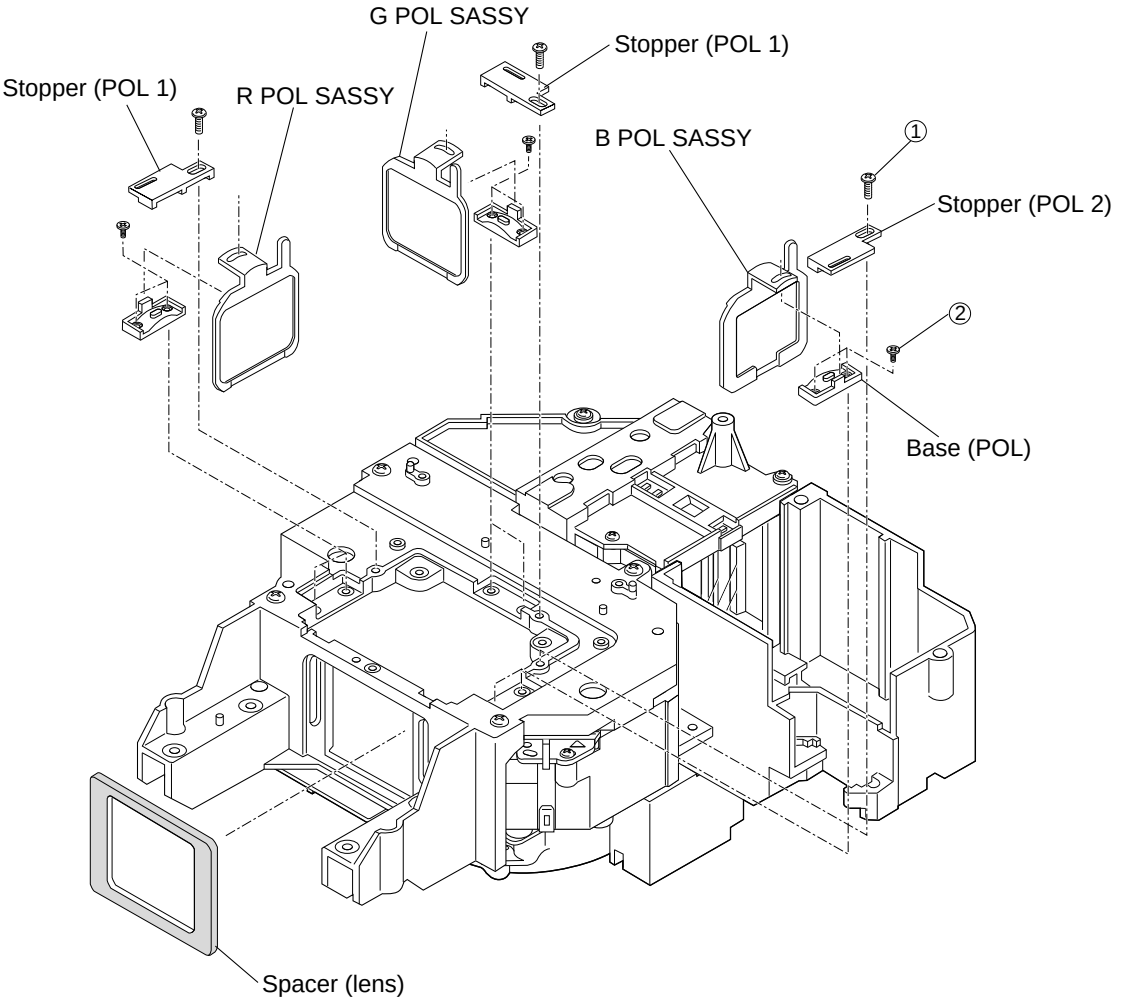
(1) Remove the three screw ①, and take out the OPT BASE SASSY.



16.B POL SASSY/STOPPER (POL2)/BASE (POL)/FILTER (LENS)

(1) Remove the one each of the screw ① and the screw ②, and take out the B POL SASSY, STOPPER (POL2), and BASE (POL). (Also the R POL SASSY and the G POL SASSY in the same manner)

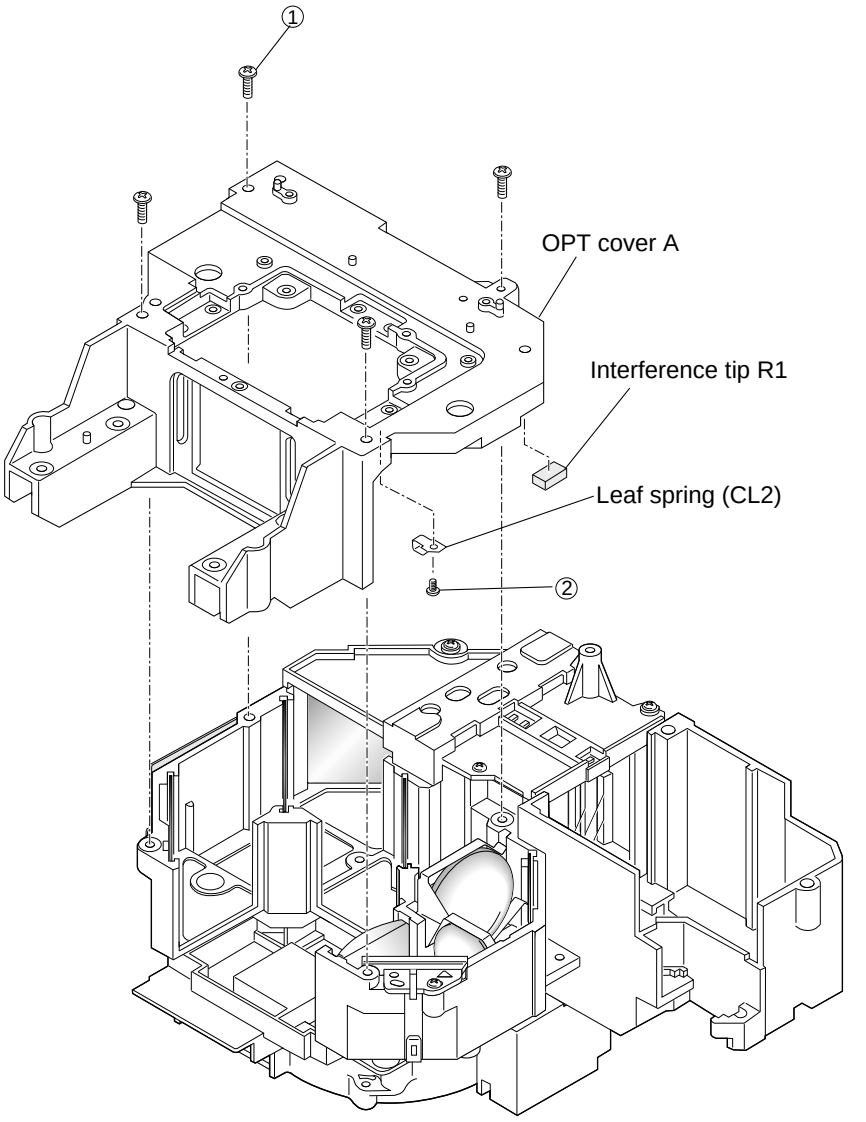
(2) Take out the FILTER (LENS).



17.COVER OPT A/LEAF SPRING (CL2)

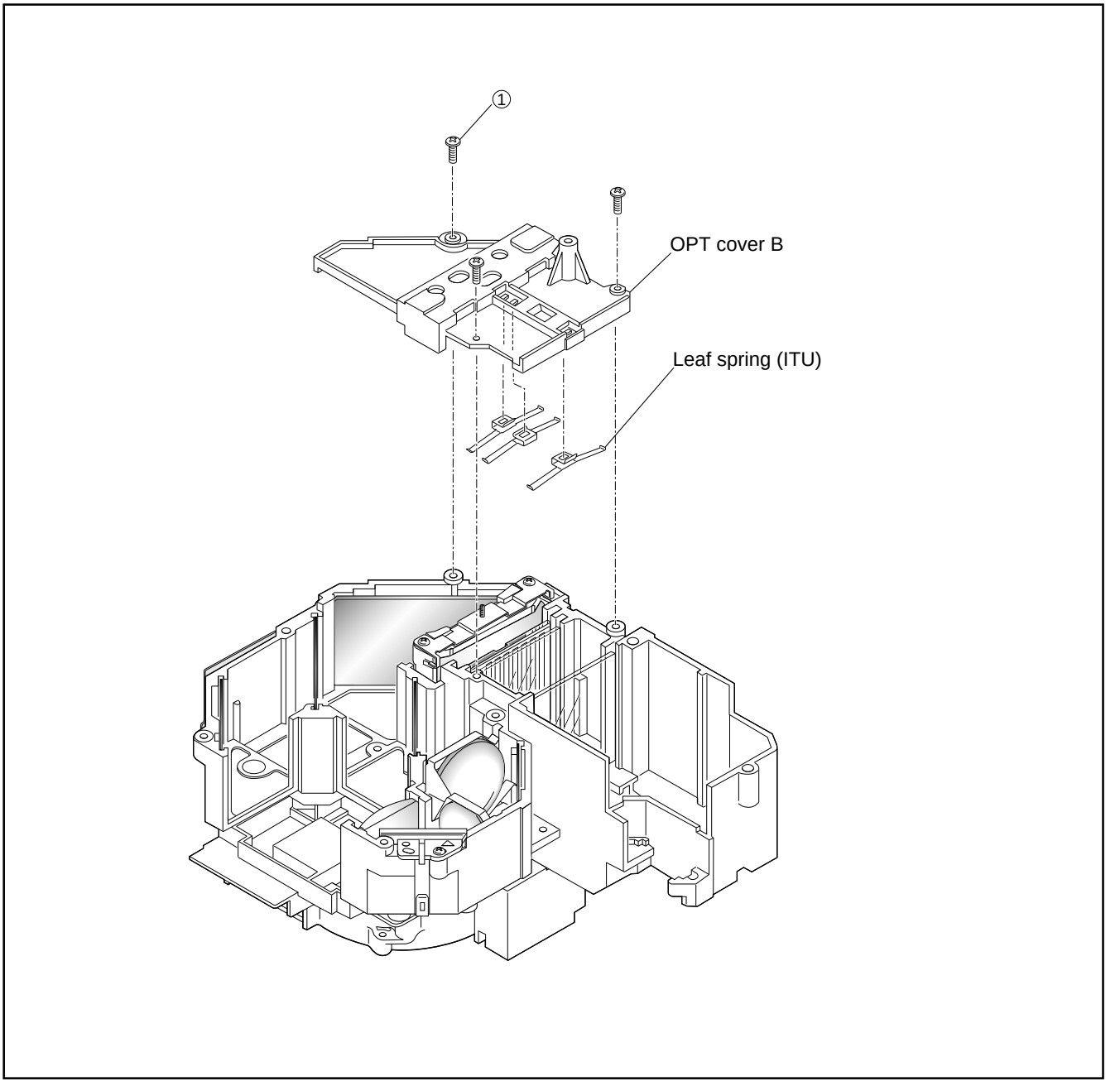
(1) Remove the four screws ①, and take out the COVER OPT A.

(2) Remove the one screw ②, and take out the LEAF SPRING (CL2).



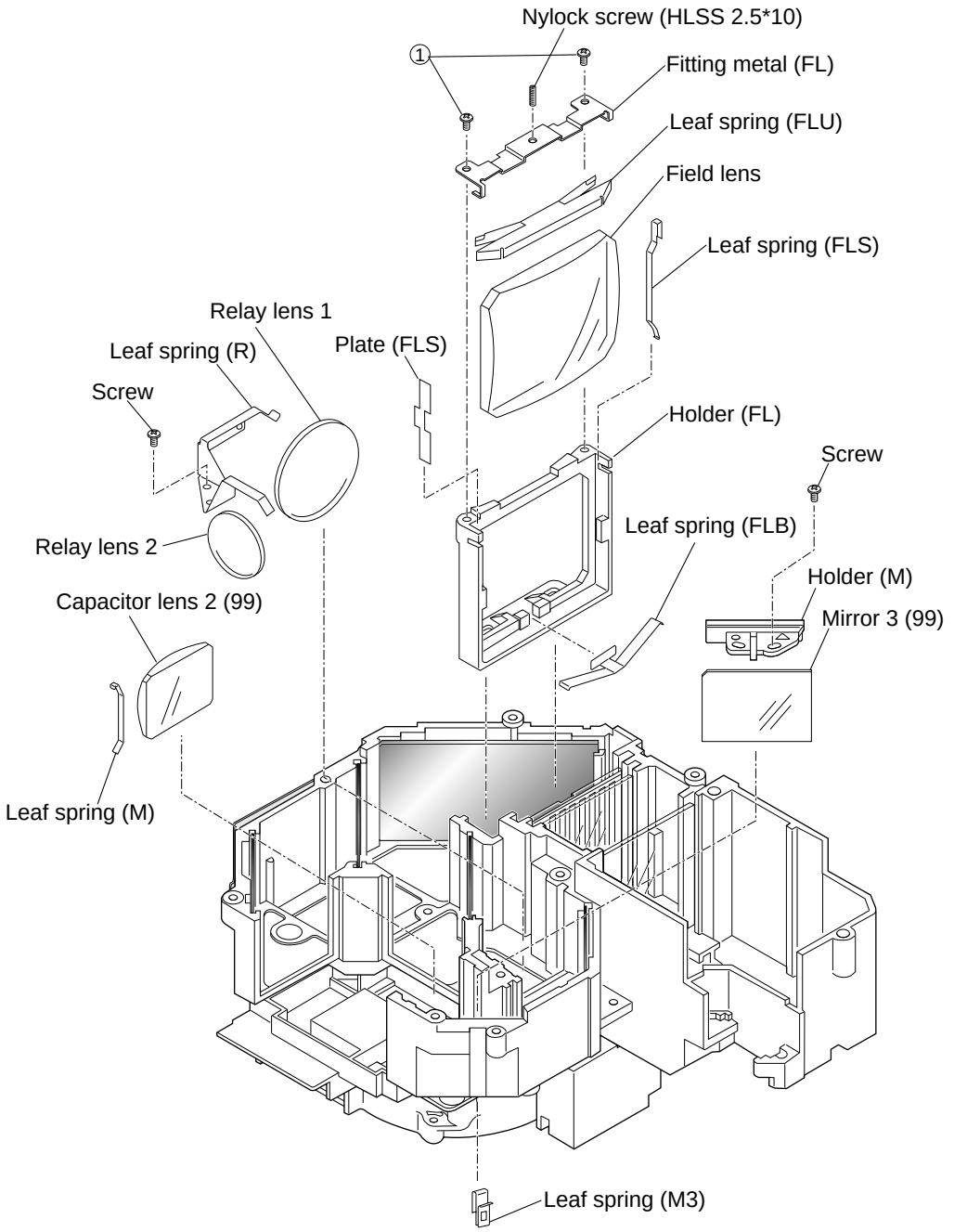
18.COVER OPT B/LEEF SPRING (ITU)

(1) Remove the three screws (1), and take out the COVER OPT B.



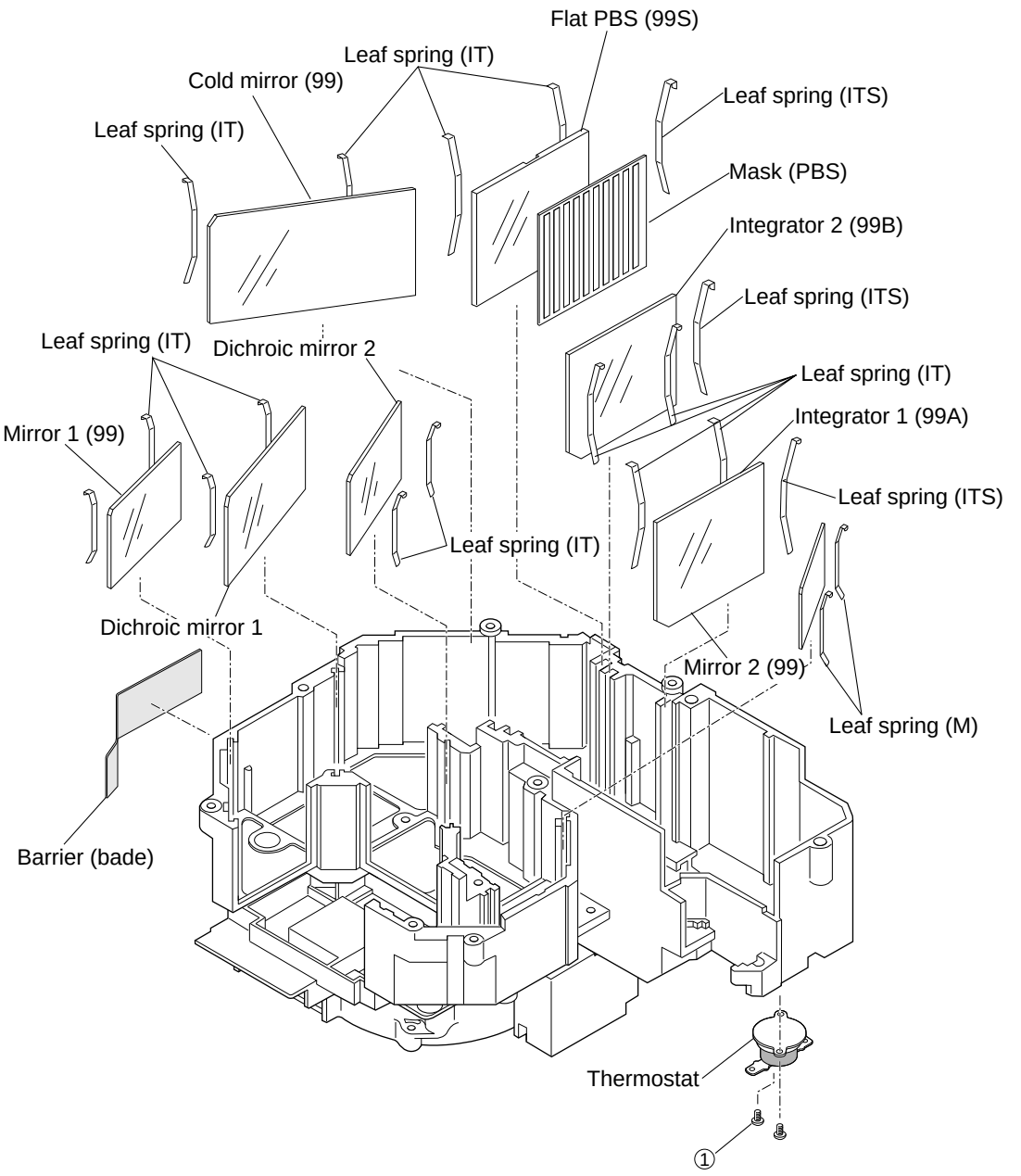
19. FL SASSY/RELAY LENS 1/RELAY LENS 2/CONDENSER LENS 2/MIRROR 3/LEEF SPRING (R)/ LEEF SPRING (M)/LEEF SPRING (M3)/HOLDER (M)

(1) Take out the LEEF SPRING (R) as well as the RELAY LENS 1 and the RELAY LENS 2.
(2) Take out the CONDENSER LENS 2 and the LEEF SPRING (M).
(3) Remove the LEEF SPRING (M3), and take out the HOLDER (M) and the MIRROR 3.
(4) Remove the FL SASSY.



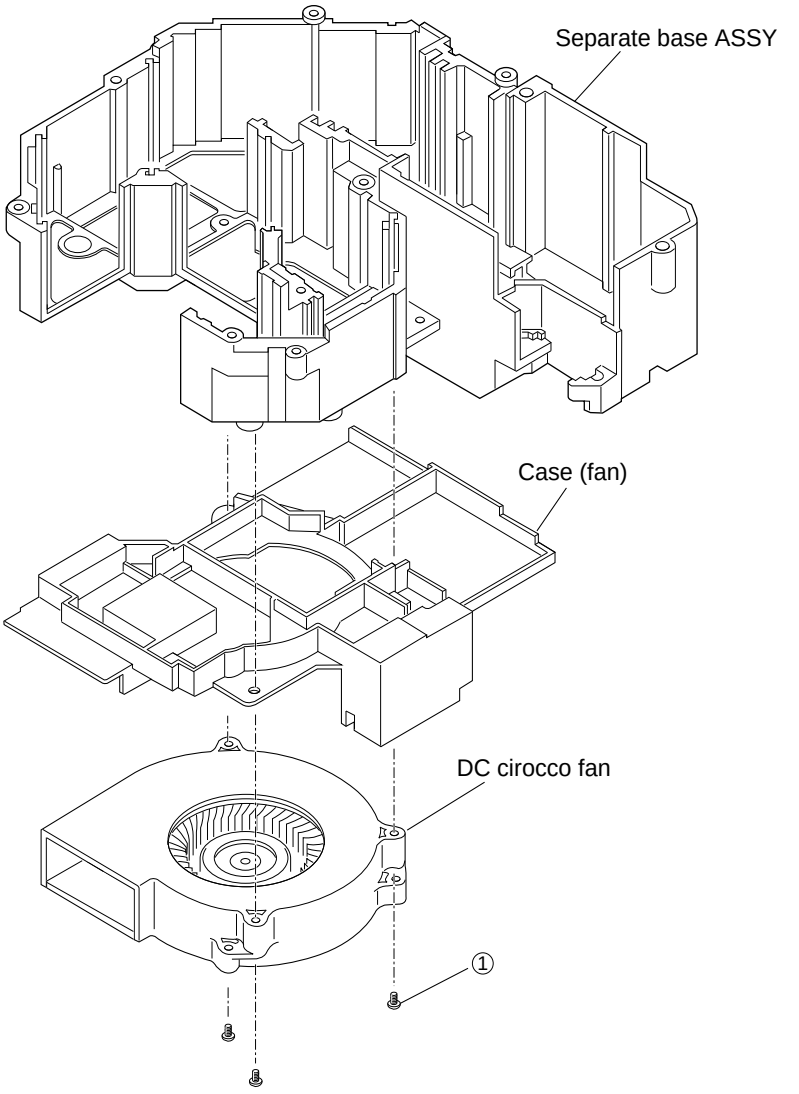
20. MIRROR 1/MIRROR 2/DICHROIC MIRROR 1/DICHROIC MIRROR 2/COLD MIRROR/ INTEGRATOR 1/INTEGRATOR 2/POLARIZATION/MASK (PBS)/LEAF SPRING (M)/ LEAF SPRING (IT)/LEAF SPRING (ITS)/THERMOSTAT

(1) Remove the two screws ①, and take out the THERMOSTAT.
(2) Take out the MIRROR 1, the MIRROR 2, the DICHROIC MIRROR 1, the DICHROIC MIRROR 2, the COLD MIRROR, the INTEGRATOR 1, the INTEGRATOR 2, the POLARIZATION, and the MASK (PBS).
(3) Take out the LEAF SPRING (M), the LEAF SPRING (IT), and the LEAF SPRING (ITS).

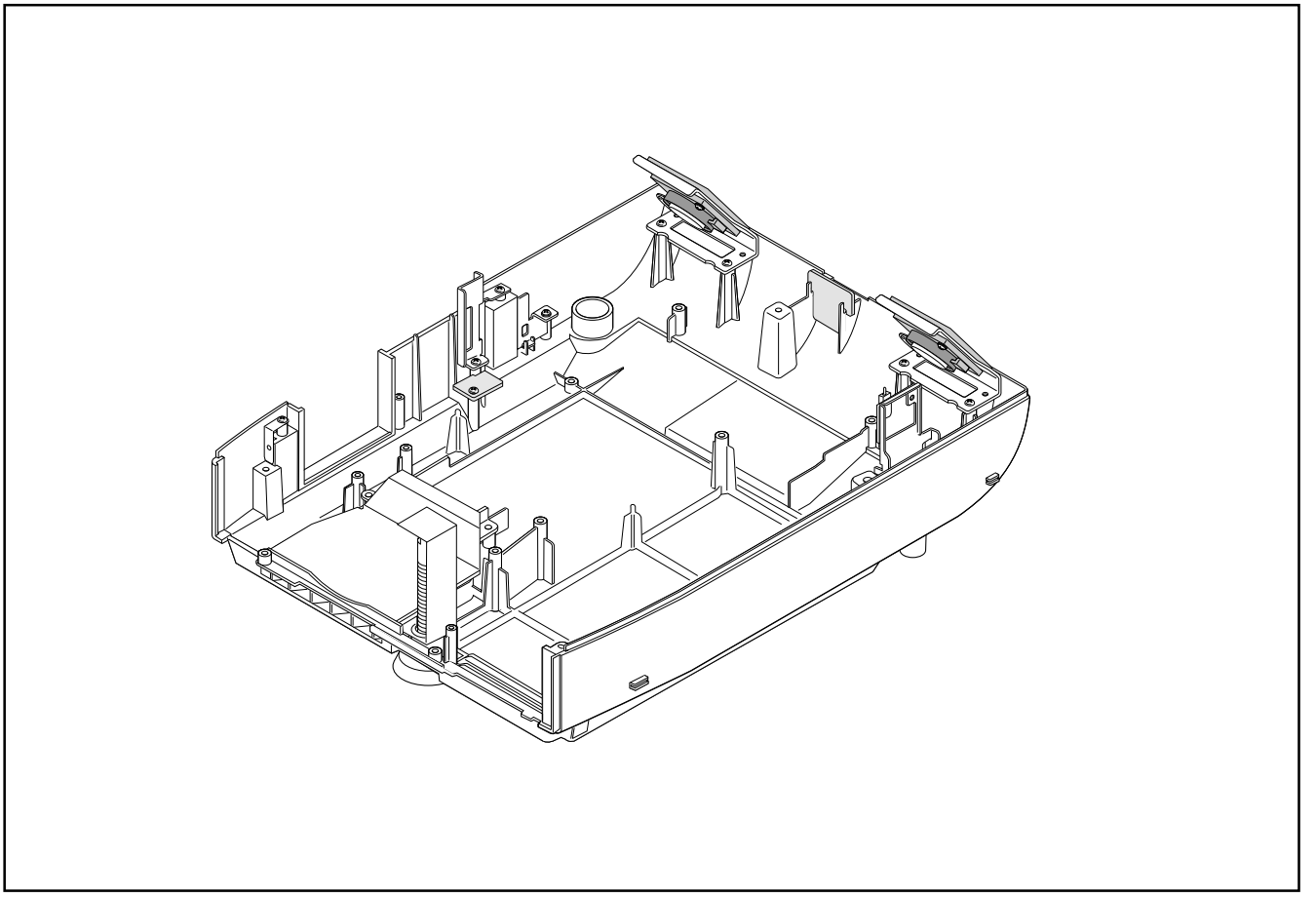


21.SEPARATE BASE/CASE (FAN)/SIROCCO FAN

(1) Remove the three screws ①, and take out the CASE (FAN) and the SIROCCO FAN.

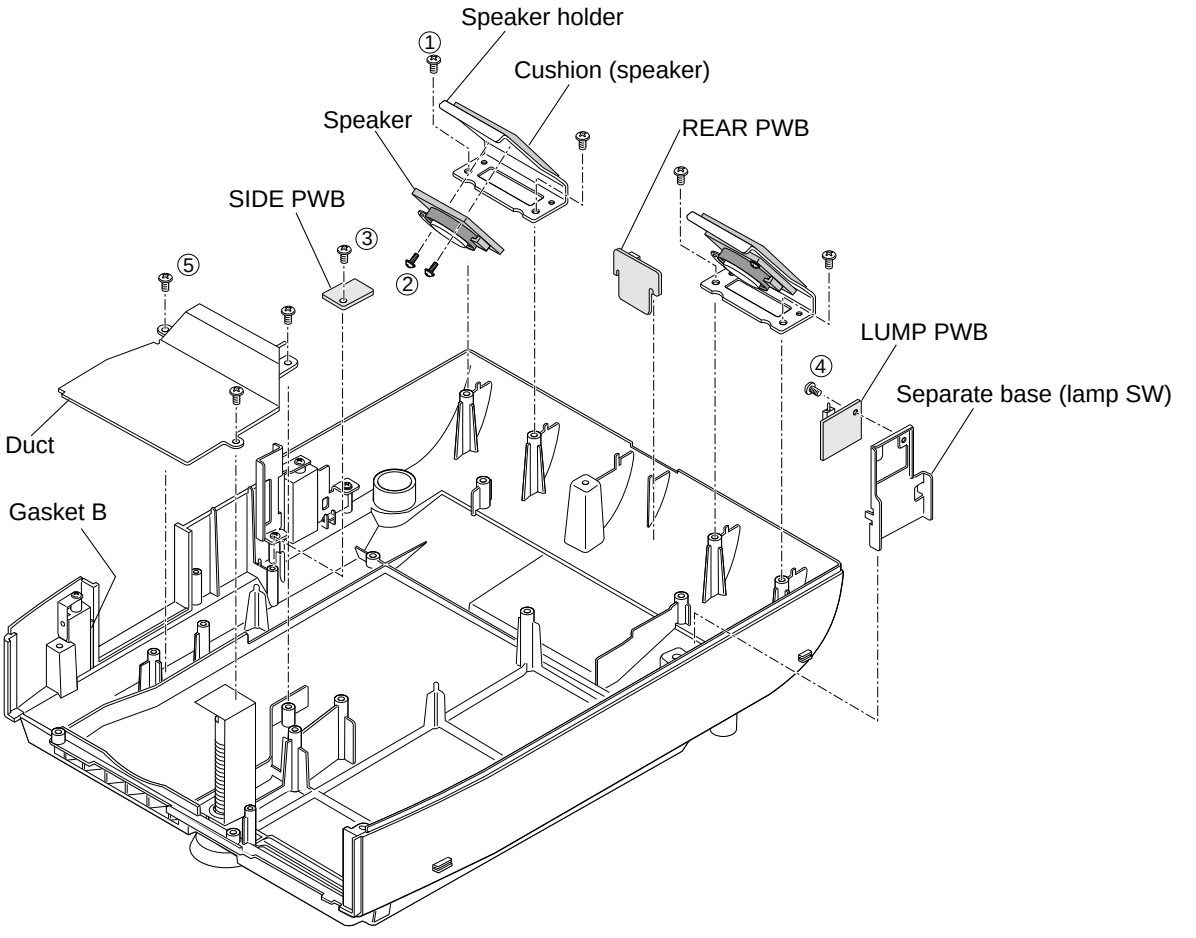


22.BOTTOM COVER SASSY



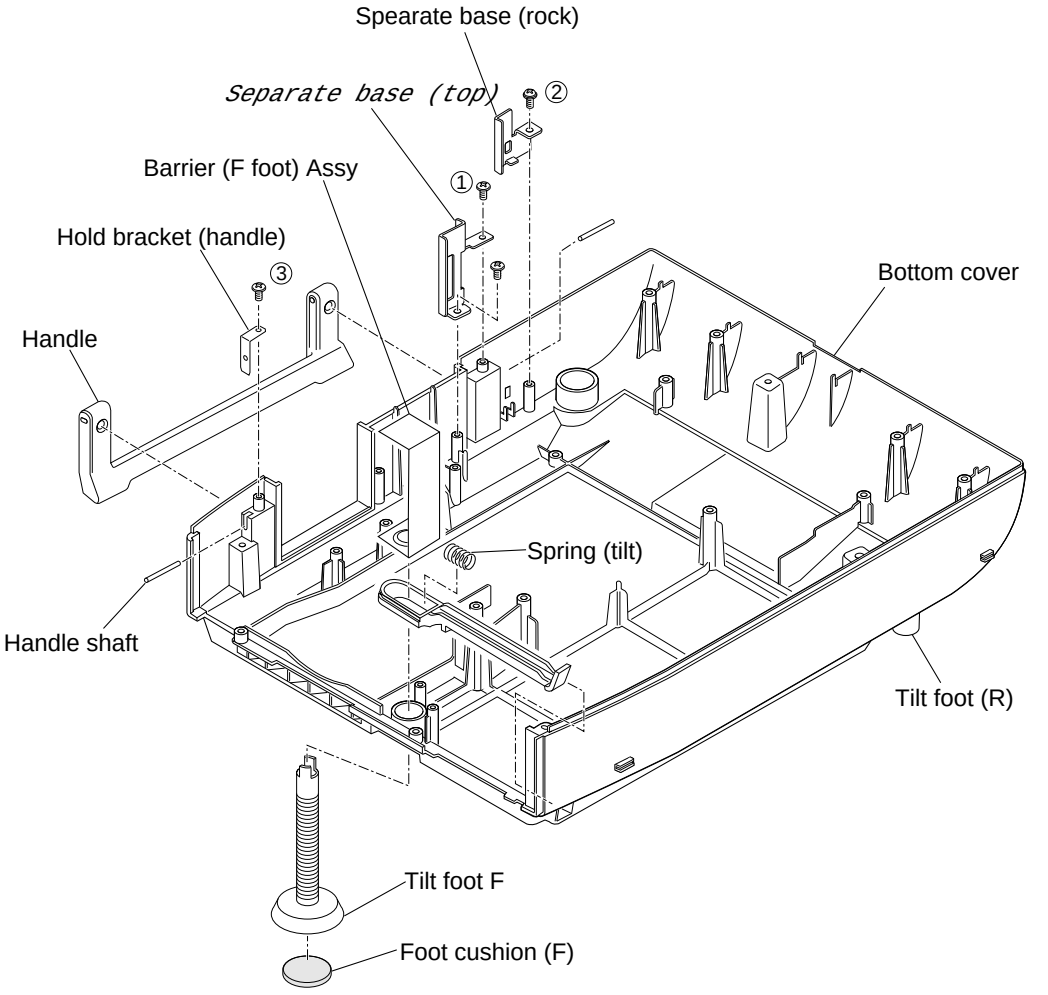
23.DUCT/SIDE PWB ASSY/REAR PWB ASSY/LUMP PWB ASSY/HOLDER (SPEAKER)/ SPEAKER/BRACKET (LAMP SW)

(1) Remove the two screws ①, and take out the HOLDER (SPEAKER).
(2) Remove the two screws ②, and take out the SPEAKER.
(3) Remove the one screw ③, and take out the SIDE PWB ASSY.
(4) Remove the one screw ④, and take out the LUMP PWB ASSY.
(5) Remove the three screws ⑤, and take out the DUCT.

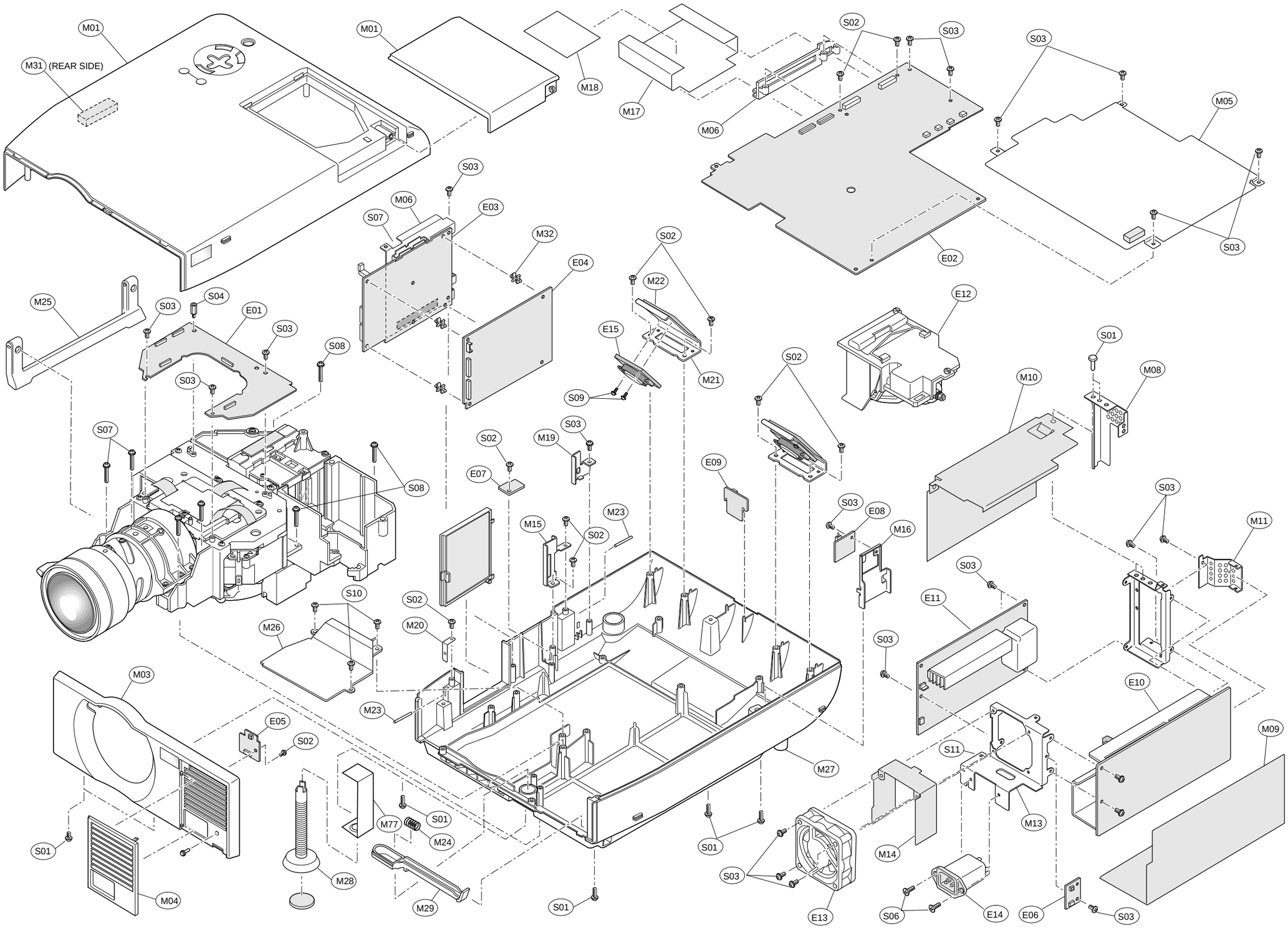


24.BARRIER (TOP)/BARRIER (ROCK)/HOLD BRACKET (HANDLE)/HANDLE/SHAFT HANDLE/TILT FOOT F/TILT BUTTON/SPRING (TILT)

(1) Remove the two screws ①, and take out the BARRIER (TOP).
(2) Remove the one screw ①, and take out the BARRIER (ROCK).
(3) Remove the one screw ①, and take out the HOLD BRACKET (HANDLE).
(4) Draw out the two shaft handles, and take out the HANDLE.
(5) Take out the TILT FOOT F, the TILT BUTTON, and the SPRING (TILT).



MEMO


M01
M31 (REAR SIDE)
M01
M18
M17
M06
S02
S03
S03
M05
S03
E02
S03
M06
S07
E03
M32
E04
S02
M22
E12
M25
S03
S04
E01
S03
S08
S03
E15
M21
S09
S02
S01
M08
M10
S07
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S02
M19
S03
E07
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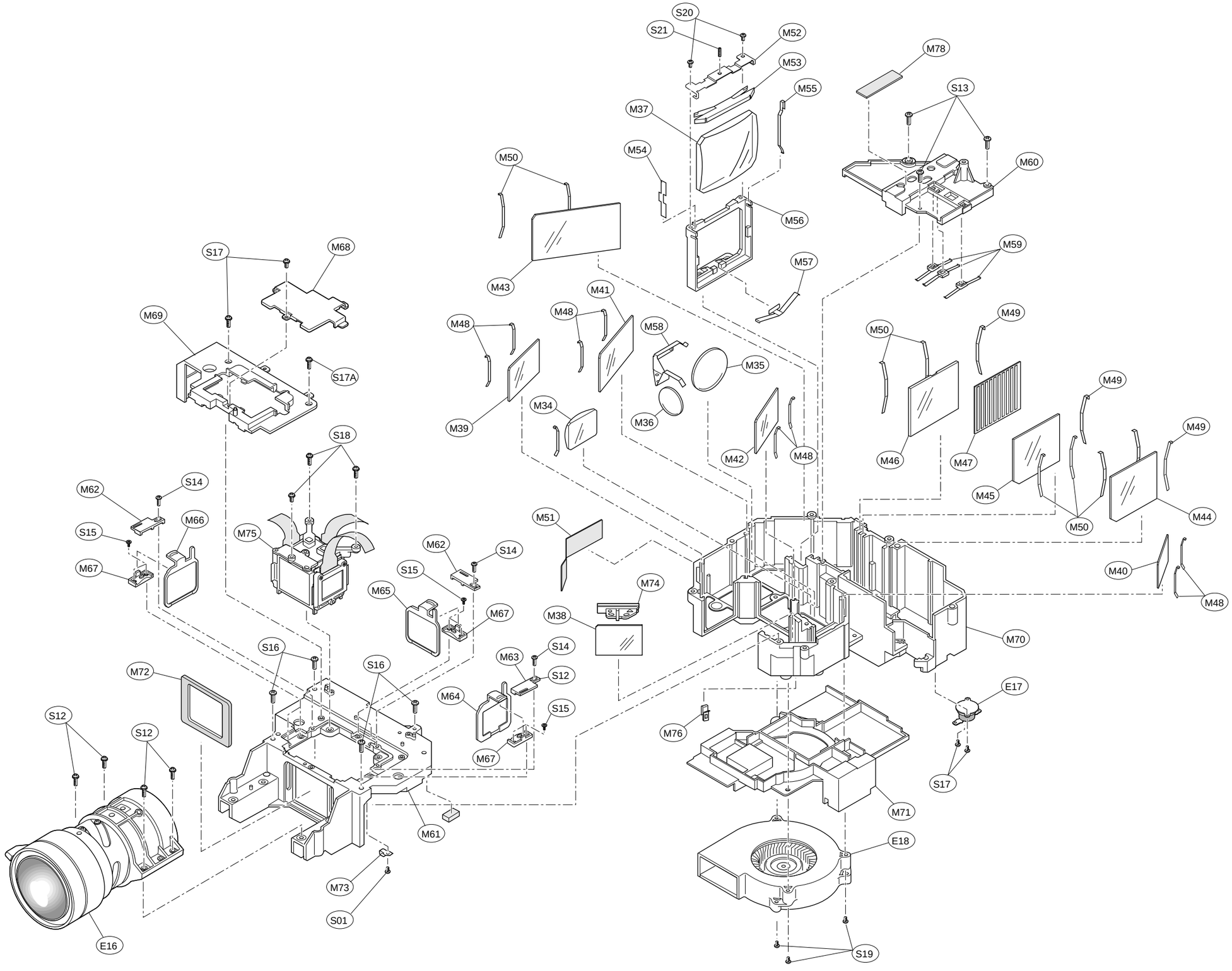
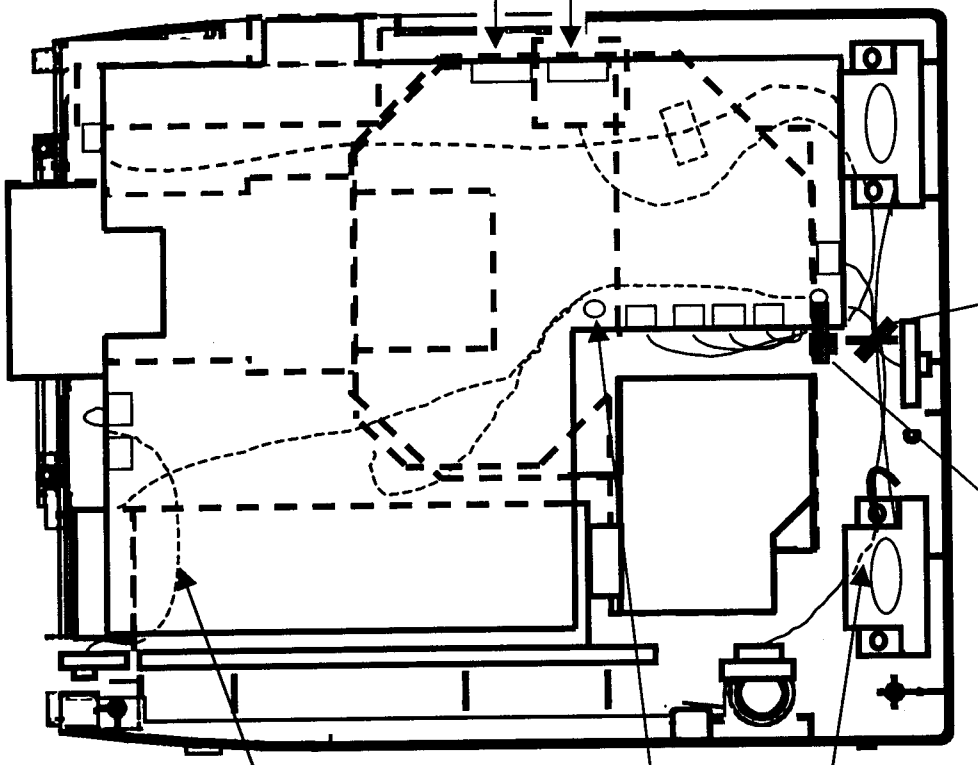
S03
E08
M16
S03
M11
M15
S02
M23
S03
E11
S10
S02
M26
M20
S03
E10
M03
M23
E05
S02
M27
M09
S11
S01
M77
S01
M24
M13
S01
S03
M14
M28
M29
S01
S03
E13
S06
E14
E06
S03
M04


S20
S21
M52
M53
M55
M37
M54
M50
M43
M56
M57
M78
S13
M60
M59
M41
M48
M58
M35
M39
M34
M36
M42
M48
M50
M49
M46
M47
M49
M45
M49
M44
M50
M40
M48
M51
M74
M38
M70
E17
M76
S17
M71
E18
S19
S17
M68
M69
S17A
S18
M62
S14
M66
S15
M67
M75
M62
S14
S15
M65
M67
S16
S16
M72
M63
S14
S12
M64
S15
M67
S12
S12
M61
M73
S01
E16

METHOD OF WIRING

Make the forming for the connectors as described below.

Push CNOXT and CNOXV in between the MAIN PWB and the LCEP PWB.



Do not pinch the wiring material between the MAIN P-board and the power supply.

Pass POF1 and POF2 by the inner side of the PWB holder.
(This arrangement is intended to prevent the wiring material from being positioned too close to the lamp side and pinched by the top cover.)

SAFETY

Bind POLC and POSP with the binding lugs. [To prevent the wiring material from coming contact with the lamp. (Countermeasures taken to prevent heat generation)]

Bind POFC and POLC around the hole of the MAIN PWB by the use of the harness bands, in order to hold the sag in POF1 and POF2.
(This arrangement is intended to prevent the wiring material from being positioned too close to the lamp side and pinched by the top cover.)

Insert POLC, POSP, and PORE M3 in the groove of the top cover, and fasten them with the Scotch tape SUPER 10.
(This action is intended to prevent the wiring material from being pinched by the top cover.)

BD01 : Harness band (24280701)
SMA01 : Scotch tape (92203961)

REPLACEMENT PART LIST

Notes:

1. Parts orders must contain model name, parts number and description.
2. When you place an order for spare parts, please refer to the respective service manual and mention the right parts number on your P.O. Sheets.
3. The components identitied by a ⚠ mark or with the symbol Nos. shaded are critical for safety. Replace only with parts number specified.
   The letters NSP in the table indicate non-service parts.

1. MT840

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S9D01	LCEP PWB ASSY
E02	935S9F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646531	BALLAST POWER UNIT(PHG181
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH

*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***

P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500006	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11133	TOP COVER
M01	24DT7283	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F

*** APPEARANCE PARTS ***

M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)
M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31523	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7213	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)

*** APPEARANCE PARTS ***

M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD
M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43241	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)

*** APPEARANCE PARTS ***

	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1071	ZOOM LENS(99F)
M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1291	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S6141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S6641	LAMP HOUSE SASSY
M75	955S9131	OPT BASE SASSY
	955S9221	LCD SELECT SASSY

*** PRINTED & PACKING MATERIALS ***

	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4471	CARTON BOX
	70810775	LINE CORD U-3 L3.0
	78038451	QUICK REFERENCE 99MT
	78038472	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

2. MT840G

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S9D01	LCEP PWB ASSY
E02	935S9F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646531	BALLAST POWER UNIT(PHG181
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH
P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500006	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11253	TOP COVER
M01	24DT7473	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F
M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)

*** APPEARANCE PARTS ***

M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31853	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7283	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)
M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD

*** APPEARANCE PARTS ***

M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
M54	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43251	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)
	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1071	ZOOM LENS(99F)

*** APPEARANCE PARTS ***

M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1291	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM3	73D3W015	CN3P(REM3)125W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S6141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S6641	LAMP HOUSE SASSY
M75	955S9131	OPT BASE SASSY
	955S9221	LCD SELECT SASSY

*** PRINTED & PACKING MATERIALS ***

	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4481	CARTON BOX(PB05)
	70800033	LINE CORD
	78038451	QUICK REFERENCE 99MT
	78038472	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

3. MT1040

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S6D01	LCEP PWB ASSY
E02	935S6F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646531	BALLAST POWER UNIT(PHG181
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH
P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500006	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11133	TOP COVER
M01	24DT7283	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F
M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)

*** APPEARANCE PARTS ***

M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31053	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7183	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)
M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD

*** APPEARANCE PARTS ***

M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
M54	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43201	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)
	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1071	ZOOM LENS(99F)

*** APPEARANCE PARTS ***

M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1291	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM3	73D3W015	CN3P(REM3)125W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S6141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S6641	LAMP HOUSE SASSY
M75	955S6131	OPT BASE SASSY
	955S6221	LCD SELECT SASSY

*** PRINTED & PACKING MATERIALS ***

	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4441	CARTON BOX
	70810775	LINE CORD U-3 L3.0
	78038451	QUICK REFERENCE 99MT
	78038472	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

4. MT1040G

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S6D01	LCEP PWB ASSY
E02	935S6F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646531	BALLAST POWER UNIT(PHG181
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH
P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500006	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11253	TOP COVER
M01	24DT7473	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F
M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)

*** APPEARANCE PARTS ***

M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31843	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7273	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)
M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD

*** APPEARANCE PARTS ***

M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
M54	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43211	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)
	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1071	ZOOM LENS(99F)

*** APPEARANCE PARTS ***

M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1291	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM3	73D3W015	CN3P(REM3)125W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S6141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S6641	LAMP HOUSE SASSY
M75	955S6131	OPT BASE SASSY
	955S6221	LCD SELECT SASSY

*** PRINTED & PACKING MATERIALS ***

	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4451	CARTON BOX
	70800033	LINE CORD
	78038451	QUICK REFERENCE 99MT
	78038472	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

5. MT1045

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S6D01	LCEP PWB ASSY
E02	935S3F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646761	BALLAST POWER UNIT
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH
P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500005	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11133	TOP COVER
M01	24DT7283	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F
M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)

*** APPEARANCE PARTS ***

M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31043	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7173	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)
M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD

*** APPEARANCE PARTS ***

M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
M54	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43161	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)
	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1061	ZOOM LENS

*** APPEARANCE PARTS ***

M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1631	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM3	73D3W015	CN3P(REM3)125W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S3141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S3641	LAMP HOUSE SASSY
M75	955S3131	OPT BASE SASSY
	955S3221	LCD SELECT SASSY

*** PRINTED & PACKING MATERIALS ***

	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4091	CARTON BOX
	70810775	LINE CORD U-3 L3.0
	78038451	QUICK REFERENCE 99MT
	78038472	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

6. MT1045G

SYMBOL	PART NO	DESCRIPTION
*** PWB ASSYS ***		
E01	935S6D01	LCEP PWB ASSY
E02	935S3F02	MAIN PWB ASSY
E03	935S6NA2	I/O PWB ASSY
E04	935S6NB2	VIDEO-DEC PWB ASSY
E05	935S6NC2	FRONT PWB ASSY
E06	935S6ND2	RIGHT PWB ASSY
E07	935S6NE2	SIDE PWB ASSY
E08	935S6NH2	LUMP PWB ASSY
E09	935S6NG2	REAR PWB ASSY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
E10	79646521	POWER UNIT(MSE264)
E11	79646761	BALLAST POWER UNIT
CN0P1	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0P2	73895150	CABLE,FFC 36P*60 P0.5 SU
CN0XT	73895151	CABLE,FFC 30P*60 P0.5 SU
CN0XV	73895100	CABLE,FFC 40P*60 P0.5 SU
M1001	70056478	CONNECTOR,D-SUB MINI
M1002	70056478	CONNECTOR,D-SUB MINI
M1003	70057312	SOCKET,DIN 4P TCS7949
M1004	70505089	HEADPHONE JACK HSJ1406
M1005	70505089	HEADPHONE JACK HSJ1406
M1006	70051862	JACK,PIN 3P (YKC21-****)
M1007	70057316	DIN SOCKET 8P (TCS7932)
M1008	70057316	DIN SOCKET 8P (TCS7932)
M1009	70505089	HEADPHONE JACK HSJ1406
P0BS	70ED2315	CONNECTOR,FPC 30P
P0GS	70ED2315	CONNECTOR,FPC 30P
P0LM	70ED2425	CONNECTOR,POST DF3D
P0MI	70ERT142	CONNECTOR,SOCKET (5061)
P0RS	70ED2315	CONNECTOR,FPC 30P
P0SU	70557147	USB CONNECTOR TYPE A
P0V11	70ED2407	CONNECTOR,FPC 36P
P0V12	70ED2407	CONNECTOR,FPC 36P
P0V21	70ED2407	CONNECTOR,FPC 36P
P0V22	70ED2407	CONNECTOR,FPC 36P
P0XT	70ED2315	CONNECTOR,FPC 30P
P0XT	70ED2404	FPC CONNE FH12-30S-0.5SH
P0XV	70ED2038	CONNECTOR,FFC 40P
P0XV	70ED2249	CONNECTOR,FPC 40P
E18	31700103	SCIROCCO FAN
E13	31710911	FAN MOTOR
E14	61062176	POWER LINE FILTER
E15	63099063	SPEAKER 40*28MM 8H 1W
E17	66500005	THERMOSTAT
	73W2V004	CN2-WP(BM)125W,1672-22
	73W50016	CONNECTOR 5P(CP1)

*** APPEARANCE PARTS ***

S02	91613051	SCREW,#2CBITS*3*8*15BF
S04	24N04491	STUD(M3*14)
S03	910E3031	SCREW,PL-CPIMS*3*6*15BF
S08	91614066	#2CBTS*4*16*3KF
S01	910E3053	SCREW,PL-CPIMS*3*8*15KF
S10	24N04081	SCREW(CB PTIGHT3*8*15BF)
	24N04161	INCERTNUT(M3*H5)
	91052011	CFIMS*2*4*15BF
	91052041	SCREW,CFIMS*2*8*15BF
S06	91053052	SCREW,CFIMS*3*8*15CF
	910D2041	SCREW,SL-CPIMS*2*8*15BF
S17	910D3031	SCREW,SL-CPIMS*3*6*15BF
S18	910D3061	SCREW,SL-CPIMS*3*10*15BF
S19	910D4091	SCREW,SL-CPIMS*4*25*15BF
	910E2511	PL-CPIMS*2.5*6*15BF
	910E4011	SCREW,PL-CPIMS*4*8*15BF
S12	910E4021	SCREW,PL-CPIMS*4*10*15BF
S05	910E4111	SCREW,PL-CPIMS*4*30*15BF
	91112001	SCREW,CBIMS*2*3*15BF
S14	91113053	SCREW CBIMS*3*8*15KF
S16	91154073	SCREW CBIMS*4*20*15KF
S11	91580402	WASHER,ETSTWA*4*15CF
S20	91613051	SCREW,#2CBITS*3*8*15BF
	24280701	BAND (L=100)
	24852621	WASHER,SPECIAL
	24950101	LUG
	24C03241	LED SPACER(H=14.2)
	24C04441	PWB HOLDER(MPS-14-0)
M32	24C04451	PWB HOLDER(WLS-06)
	24C05101	FLAT PUSH NUT
	24C05321	RIVET,PUSH(PSR)
M33	24D11121	BOTTOM COVER
	24D11253	TOP COVER
M01	24DT7473	TOP COVER ASSY
	24DT7291	BOTTOM COVER ASSY
	24F30901	INDICATOR(PW)
	24F30911	INDICATOR(PC)
	24F30922	PC CARD COVER A
	24F30931	PC CARD COVER B
	24F30941	FILTER A
M28	24F30951	TILT FOOT F
M27	24F30971	TILT FOOT R
M29	24F30981	TILT BUTTON
M26	24F30991	DUCT
	24F31001	LAMP COVER
	24F31011	FILTER CASE A
	24F31021	FILTER CASE B
M25	24F31031	HANDLE
	24F31071	FILTER R
M70	24FT7421	SEPARATE BASE ASSY
M60	24F31091	COVER OPT B
M56	24F31101	HOLDER(FL)

*** APPEARANCE PARTS ***

M74	24F31111	HOLDER(M)
M68	24F31121	COVER(DUCT)
M71	24F31132	CASE(FAN)
M67	24F31141	BASE(POL)
M69	24F31151	INHAIL DUCT
	24F31162	LAMP HOUSE
	24F31321	FILTER F
	24F31331	FILTER B
M30	24F31341	CUSHION FOOT(F)
	24F31351	CUSHION FOOT(R)
M62	24F31441	STOPPER(POL1)
M63	24F31451	STOPPER(POL2)
	24F31833	FRONT COVER
	24FT6951	CAP
M02	24FT7061	LAMP COVER ASSY
	24FT7071	FILTER ASSY A(SIDE)
M04	24FT7081	FILTER ASSY B(FRONT)
M06	24FT7191	PC CARD COVER B ASSY
M03	24FT7263	FRONT COVER ASSY
	24G05181	PUSH BUTTON A
	24H35161	SPRING(PC)
M24	24H35171	SPRING(TILT)
M23	24H35191	SHAFT HANDLE
M20	24H35201	HOLD BRACKET (HANDLE)
M13	24H35213	BRACKET(INLET)
M12	24H35221	BRACKET(PS)
M16	24H35231	BRACKET(LAMP SW)
M15	24H35241	BRACKET(TOP)
M61	24H35252	COVER OPT A
M59	24H35261	LEEF SPRING (ITU)
M50	24H35271	LEEF SPRING (IT)
M49	24H35281	LEEF SPRING (ITS)
M52	24H35311	PLATE(FL)
M53	24H35321	LEEF SPRING(FLU)
M57	24H35331	LEEF SPRING(FLB)
M55	24H35341	LEEF SPRING(FLS)
M58	24H35352	LEEF SPRING (R)
M73	24H35361	LEEF SPRING (CL2)
	24H35371	HOLDER(POL1)
	24H35381	HOLDER(POL2)
M48	24H35391	LEEF SPRING (M)
M76	24H35401	LEEF SPRING (M3)
	24H35411	SPRING(LAMP)
	24H35421	GRIP
	24H35431	LEEF SPRING (POL)
	24H35431	LEEF SPRING (POL)
	24H35451	BASE(XDP)
	24H35461	BRACKET(LCD)
	24H35471	BRACKET(LCD)
	24H35651	BOTTOM PLATE
M21	24H35702	HOLDER(SPEAKER)
	24H35711	TERMINAL BOARD

*** APPEARANCE PARTS ***

M47	24H35811	MASK(PBS)
M19	24H36061	BRACKET
	24H36431	BRACKET
	24H36521	PLATE(BOTTOM)
	24H36561	BARRIER LAMPHOUSE
M08	24H36571	BARRIER A
M11	24H36581	BARRIER B
M54	24H36671	PLATE(FLS)
	24HS2541	BARRIER LAMPHOUSE ASSY
	24HS2551	PLATE(BOTTOM)
	24J04321	WASHER,INSULATOR
	24J14811	FILTER A
	24J14821	FILTER
M09	24J14831	BARRIER(PS)
M10	24J14841	BARRIER
M22	24J14981	CUSHION(SPEAKER)
	24J15031	DOUBLE FACE ADHESIVE TAPE
M05	24J15132	SHIELDING PLATE(MAIN)
M14	24J15141	COVER(FAN)
M72	24J15212	SPACER (LENS)
M17	24J15231	COVER(SLOT)
M78	24J15281	SHEET COVER OPT B
	24J15291	GUSKUT A
	24J15301	GUSKUT B
M31	24J15311	GUSKUT C
M77	24J15331	BARRIER(F FOOT)
M51	24J15401	BARRIER (BASE)
M18	24J15431	SHEET(SLOT)
	24J15441	DOUBLE FACE ADHESIVE TAPE
	24J15451	DOUBLE FACE ADHESIVE TAPE
	24J15461	DOUBLE FACE ADHESIVE TAPE
	24J15521	CUSHION R1
	24J15661	SPACER (FLS)
M07	24K24211	INLAY (I/O)
	24L11331	LABEL (8*28)
	24L34191	CAUTION LABEL(SERVICE)
	24L41311	CAUTION
	24L43171	NAME PLATE
	24L43411	LABEL(FUSE)PB03
	24L43502	CAUTION LABEL(LENS)
	24L43571	LABEL(MT LAMP)
	24L43861	LABEL(INSTA CARE)
	24N03061	INCERTNUT
	24N03651	STUD(D-SUB,M2.6*3GF)
	24N04161	INCERTNUT(M3*H5)
	24N04352	SPECIAL SCREW(M4)
	24N04352	SPECIAL SCREW(M4)
	24N04481	INSERT NUT(M4)(CMK)
	24N04501	SPRING SCREW(M2*4)
S21	24N04511	SPECIAL SCREW(HLSS2.5*10)
	24N04621	B TITE(B3*4)
E16	12JS1061	ZOOM LENS

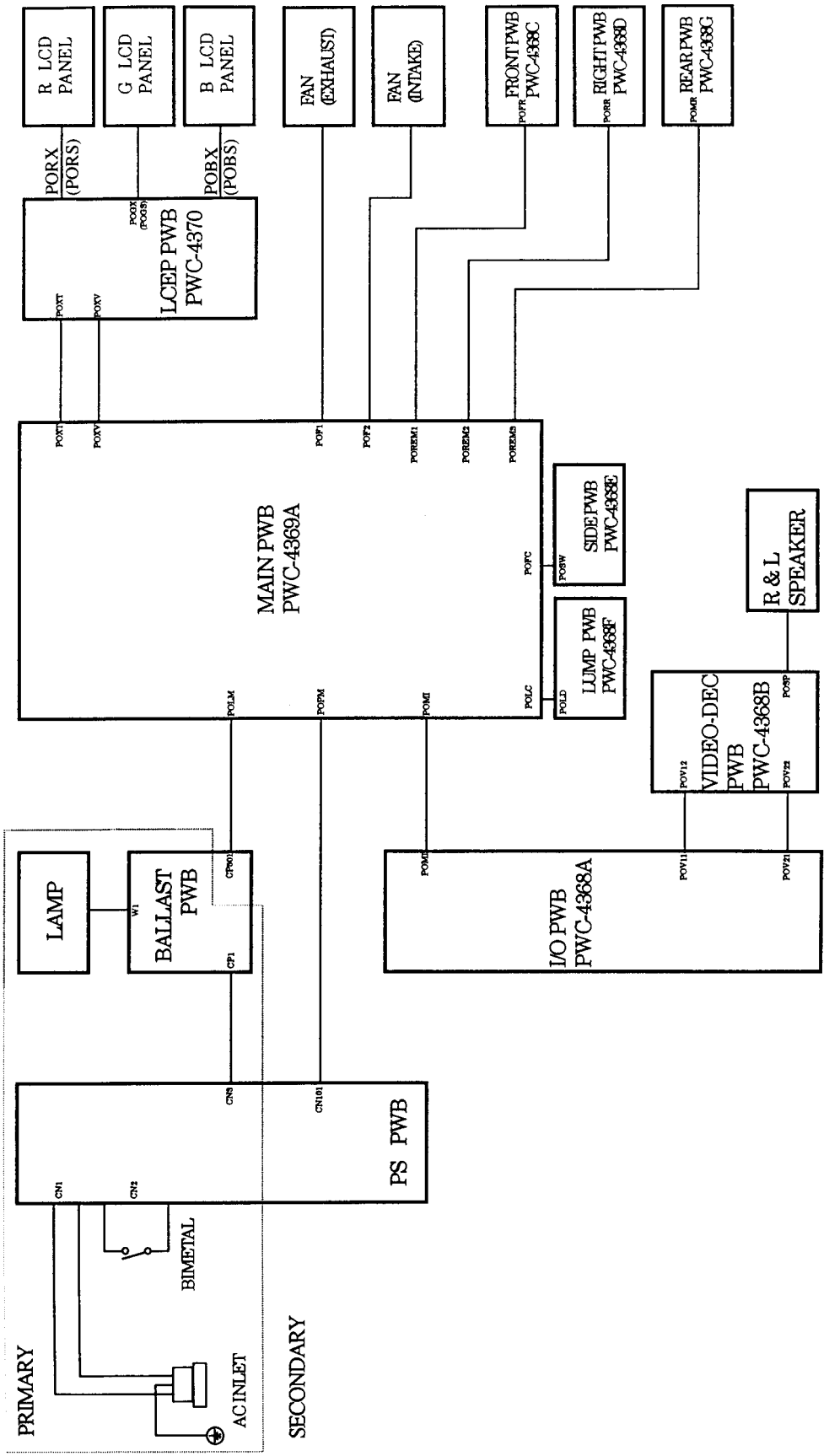
*** APPEARANCE PARTS ***

M44	12JS1081	INTEGRATOR1(99A)
M45	12JS1091	INTEGRATOR2(99B)
M44	12JS1101	INTEGRATOR1(99C)
M45	12JS1111	INTEGRATOR2(99D)
M46	12JS1121	POLARIZATION CONVERTER-S
M46	12JS1141	POLARIZATION CONVERTER-N
M37	12JS1151	FIELD LENS(99)
	12JS1161	CONDENSER LENS 1(99)
M34	12JS1171	CONDENSER LENS 1(99)
M35	12JS1181	RELAY LENS 1(99)
M36	12JS1191	RELAY LENS 2(99)
M43	12JS1201	COLD MIRROR (99)
M39	12JS1211	MIRROR 1(99)
M40	12JS1221	MIRROR 2(99)
M38	12JS1231	MIRROR 3(99)
M41	12JS1241	DICHROIC MIRROR 1(99)
M42	12JS1251	DICHROIC MIRROR 2(99)
	12JS1261	POLARIZER 1(99E)
	12JS1271	POLARIZER 2(99E)
	12JS1281	POLARIZER 3(99E)
	12JS1631	REFLCTER LAMP(99)
	25617801	TAPE,FORM
S13	25851411	SCREW,CBIPS*3*10*15KF
	61605130	FERRITE CORE (XA-901)
P0SB	70KE6496	CONNECTOR,PC CARD 568P068
	73300118	CONNECTOR,TERMINAL
	73300126	CONNECTOR
	73BDW002	CN14P(PM)115W,1007-24
	73BXV024	CN4-WP(SP)400X,1685-26
	73BXW016	CN4-3P(LM)250W,1007-26
P0FC	73D2W005	CN2P(FC)300W,1685-26
P0LC	73D2W006	CN2P(LC)300W,1685-26
P0REM3	73D3W015	CN3P(REM3)125W,1685-26
P0REM2	73D3W016	CN3P(REM2)175W,1685-26
P0REM1	73D5W015	CN5P(REM1)125W,1685-26
	955S3141	SEPALATE BASE SASSY
M66	955S6181	R POL SASSY
M65	955S6191	G POL SASSY
M64	955S6201	B POL SASSY
	955S6211	FL SASSY
E12	955S3641	LAMP HOUSE SASSY
M75	955S3131	OPT BASE SASSY
	955S3221	LCD SELECT SASSY

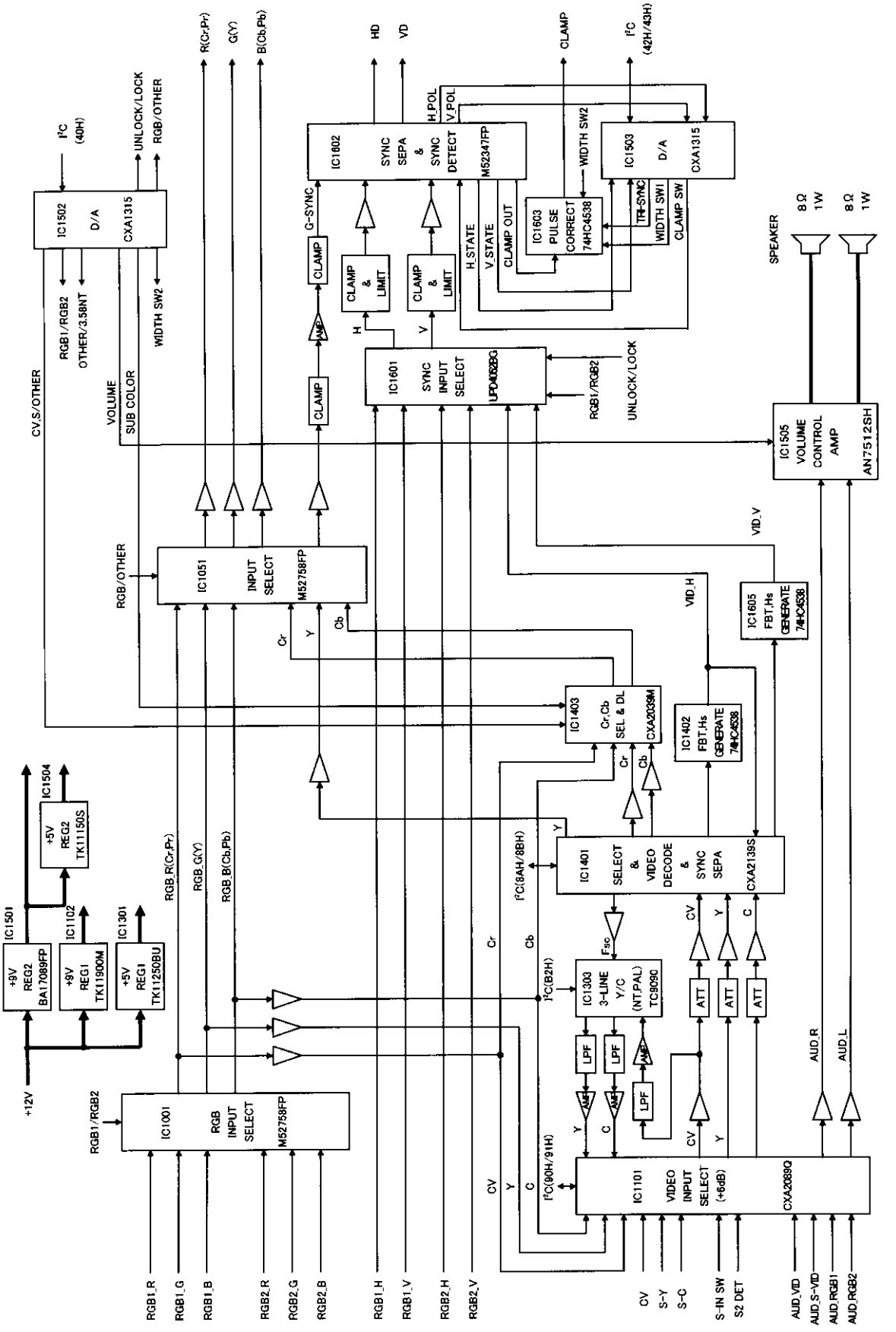
*** PRINTED & PACKING MATERIALS ***

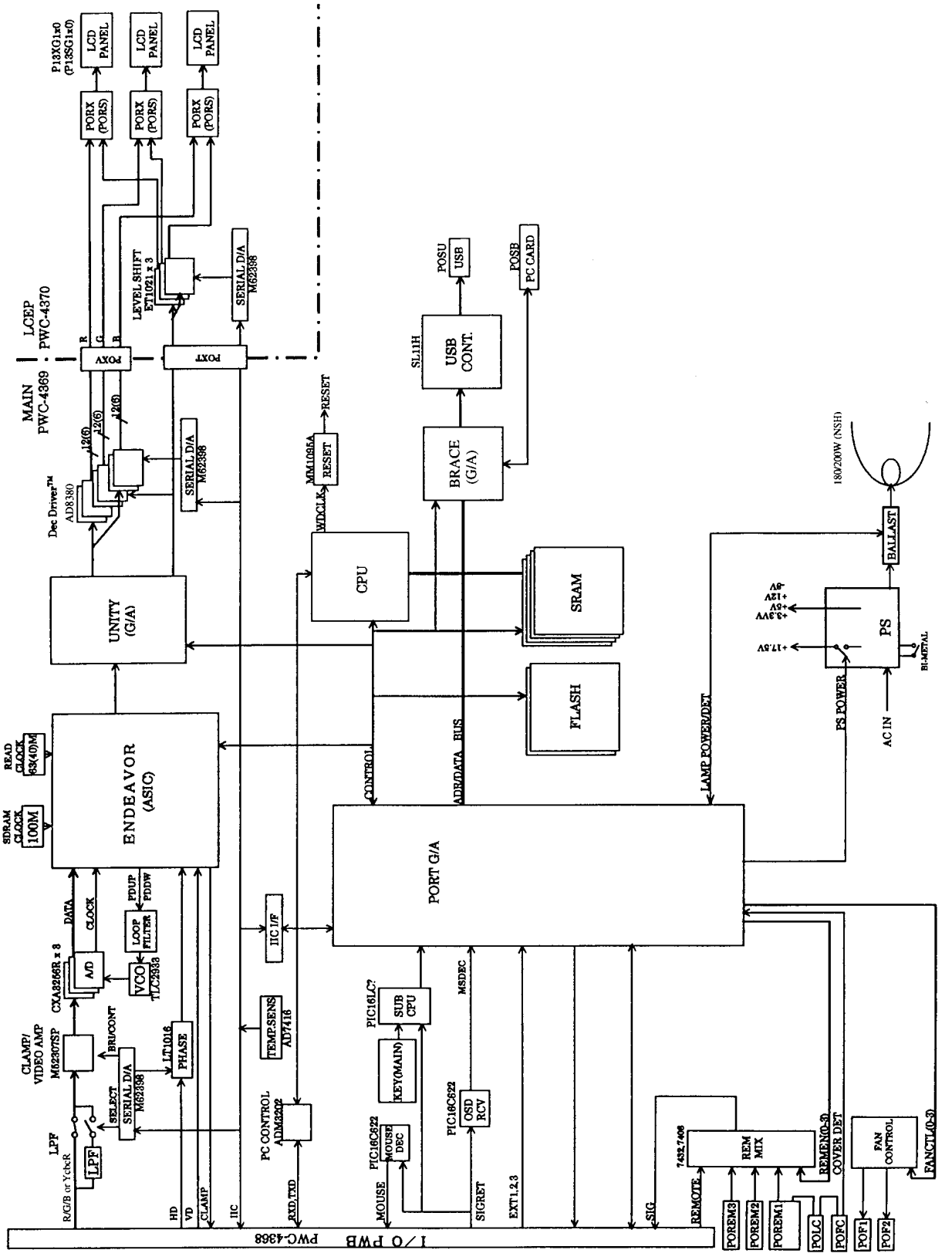
	24MU0182	PROTECTION BAG
	24MU4101	SPACER F
	24MU4111	SPACER R
	24MU4421	CARTON BOX
	70800033	POWER CORD
	78038451	QUICK REFERENCE 99MT
	78038481	SUPPLIED LIST 99MT
	78038661	USB SUPPLEMENT(MT/G/GS)
	78410962	USER'S MANUAL 99MT
	79646651	LCD-PJ
	79646674	99PJ CD-ROM

CONNECTION DIAGRAMS

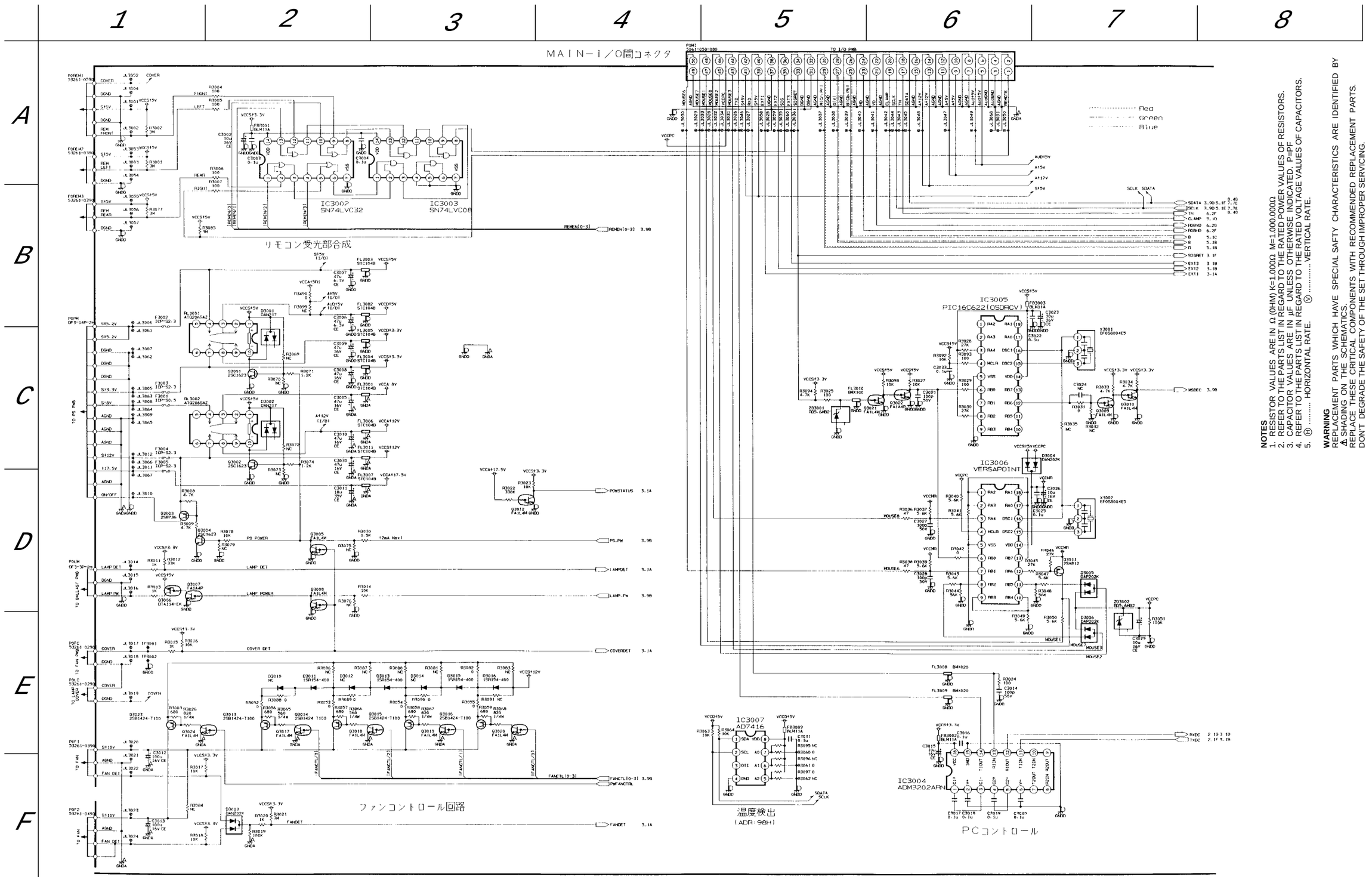


BLOCK DIAGRAMS




LCD PANEL
LCD PANEL
LCD PANEL
P13XG1x0 (P12SG1x0)
PORX (PORS)
PORX (PORS)
PORX (PORS)
LEVEL SHIFT ET1021 x 3
SERIAL D/A M62398
LCEP PWC-4370
MAIN PWC-4369
POXY
POXT
R
G
B
12(6)
12(6)
SERIAL D/A M62398
Dec Driver™ AD8380
MM1095A RESET
RESET
WDCLK
CPU
UNITY (G/A)
BRACE (G/A)
SL11H
USB CONT.
POSU
USB
POSB
PC CARD
SRAM
FLASH
180/200W (NSH)
BALLAST
PS
+17.5V
+3.3VV
+5V
+12V
-5V
BI-METAL
PS POWER
AC IN
LAMP POWER/DET
ADR/DATA BUS
CONTROL
ENDEAVOR (ASIC)
READ CLOCK 63(40)M
SDRAM CLOCK 100M
PORT G/A
IIC I/F
DATA
CLOCK
FDUP
FDDW
LOOP FILTER
VCO TC2933
A/D
CXA3266R x 3
CLAMP/ VIDEO AMP M62307SP
BRICONT
LPF
SELECT
SERIAL D/A M62398
LT1016 PHASE
TEMP.SENS AD7416
PC CONTROL ADM3202
PIC16LC?
SUB CPU
KEY(MAIN)
MSDEC
PIC16C622 MOUSE DEC
PIC16C622 OSD RCV
7432,7408
REM MIX
REMEN0-3
COVER DET
FAN CONTROL
FANCTL0-3
R/G/B or Y,Cb,R
HD
VD
CLAMP
IIC
RXD,TXD
MOUSE
SIGRET
EXT1,2,3
SIG
REMOTE
POREM3
POREM2
POREM1
POLC
POPC
POF1
POF2
I/O PWB PWC-4368

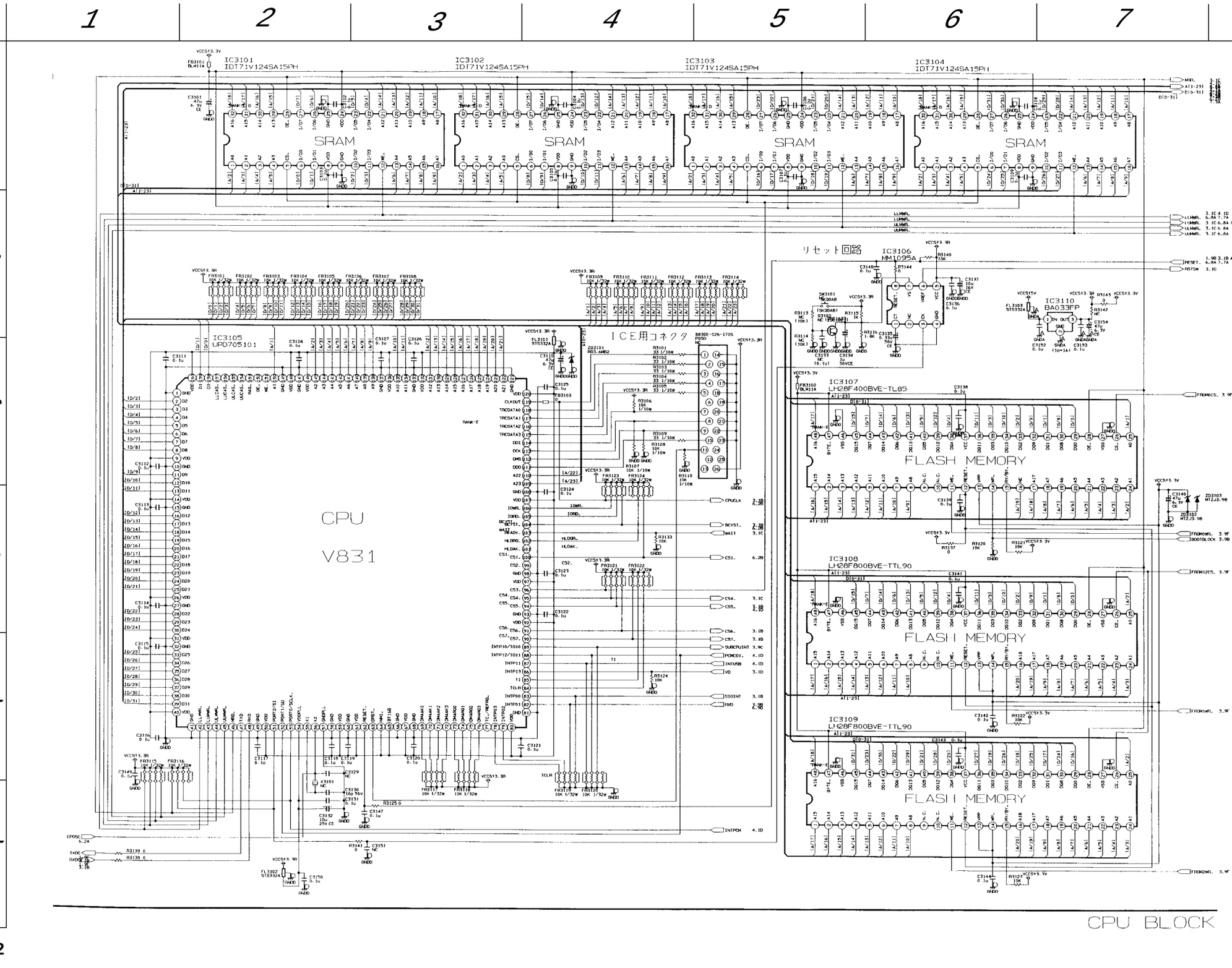
MAIN PWB (PWC-4369) (1/8)



NOTES
1. RESISTOR VALUES ARE IN Ω (0HM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠SHADING ON THE SCHEMATICS.
REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT PARTS.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

MAIN PWB (PWC-4369) (2/8)



NOTES
1. RESISTOR VALUES ARE IN Ω (OHM) K=1,000Ω M=1,000,000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ .....VERTICAL RATE.

WARNING
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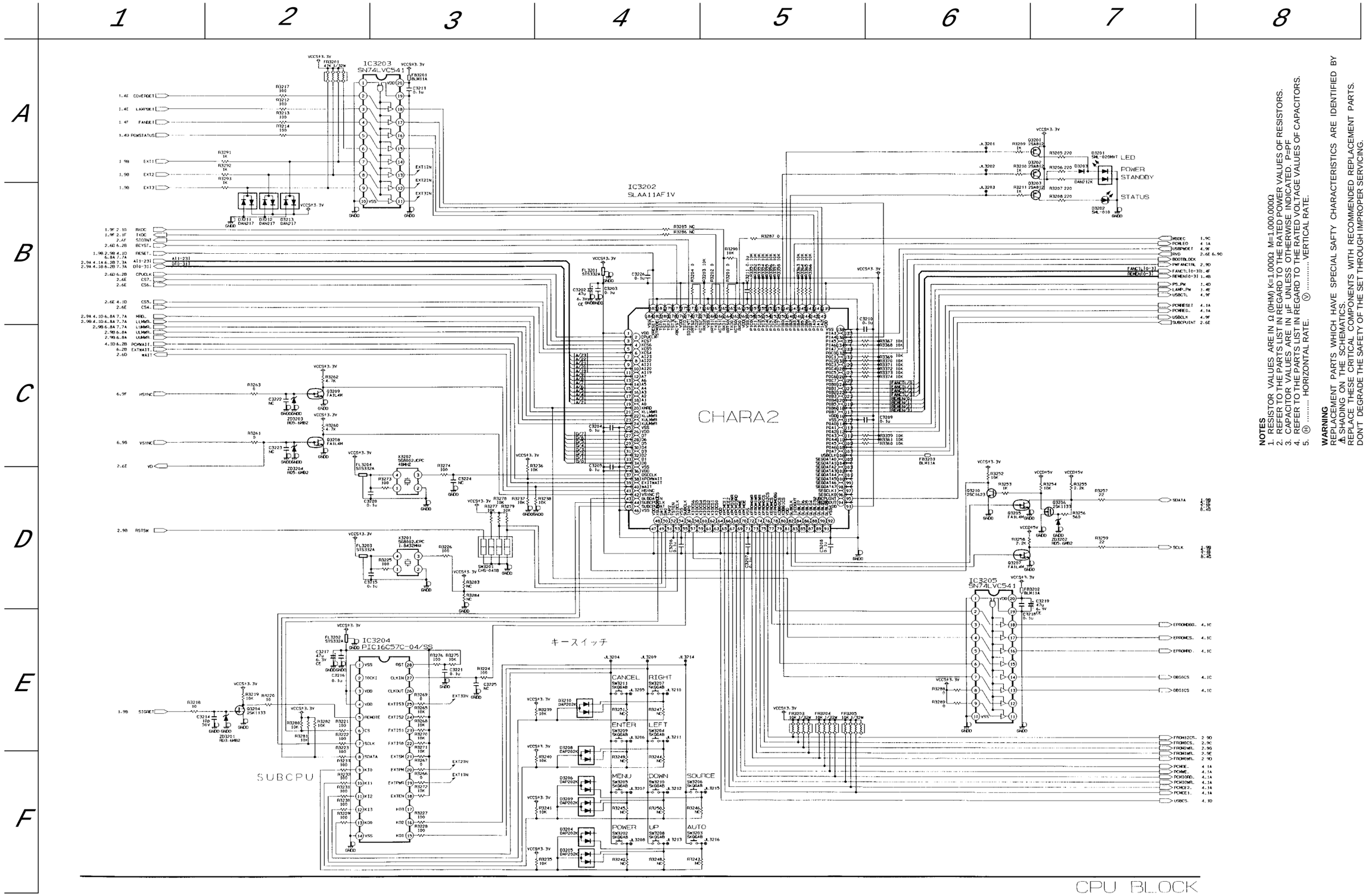
MAIN PWB (PWC-4369) (3/8)



NOTES
1. RESISTOR VALUES ARE IN Ω (0HM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS.
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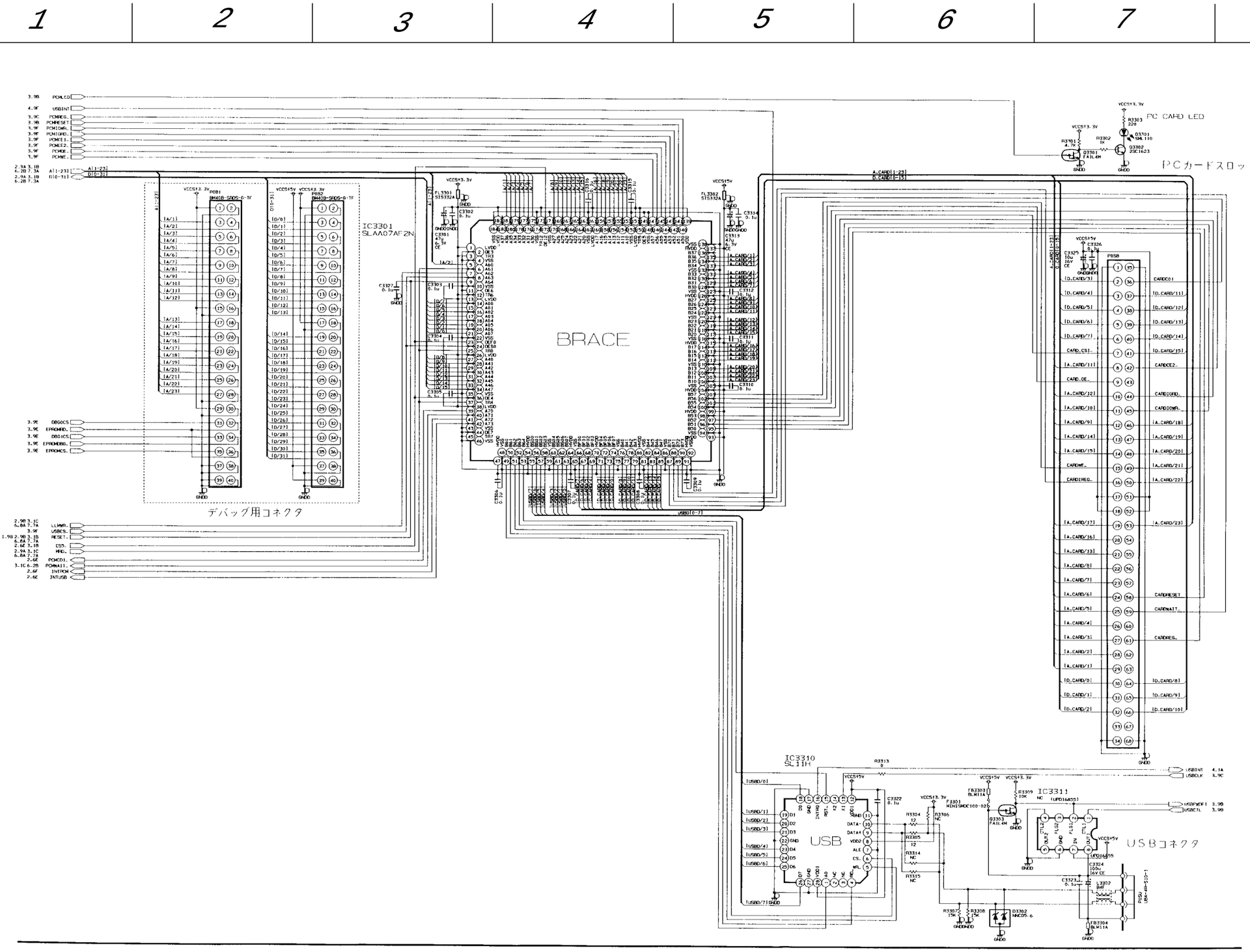
DON'T DEGRADE THE SAFEFTY OF THE SET THROUGH IMPROPER SERVICING.

MAIN PWB (PWC-4369) (4/8)



NOTES
1. RESISTOR VALUES ARE IN Ω (0HM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠SHADING ON THE SCHEMATICS.
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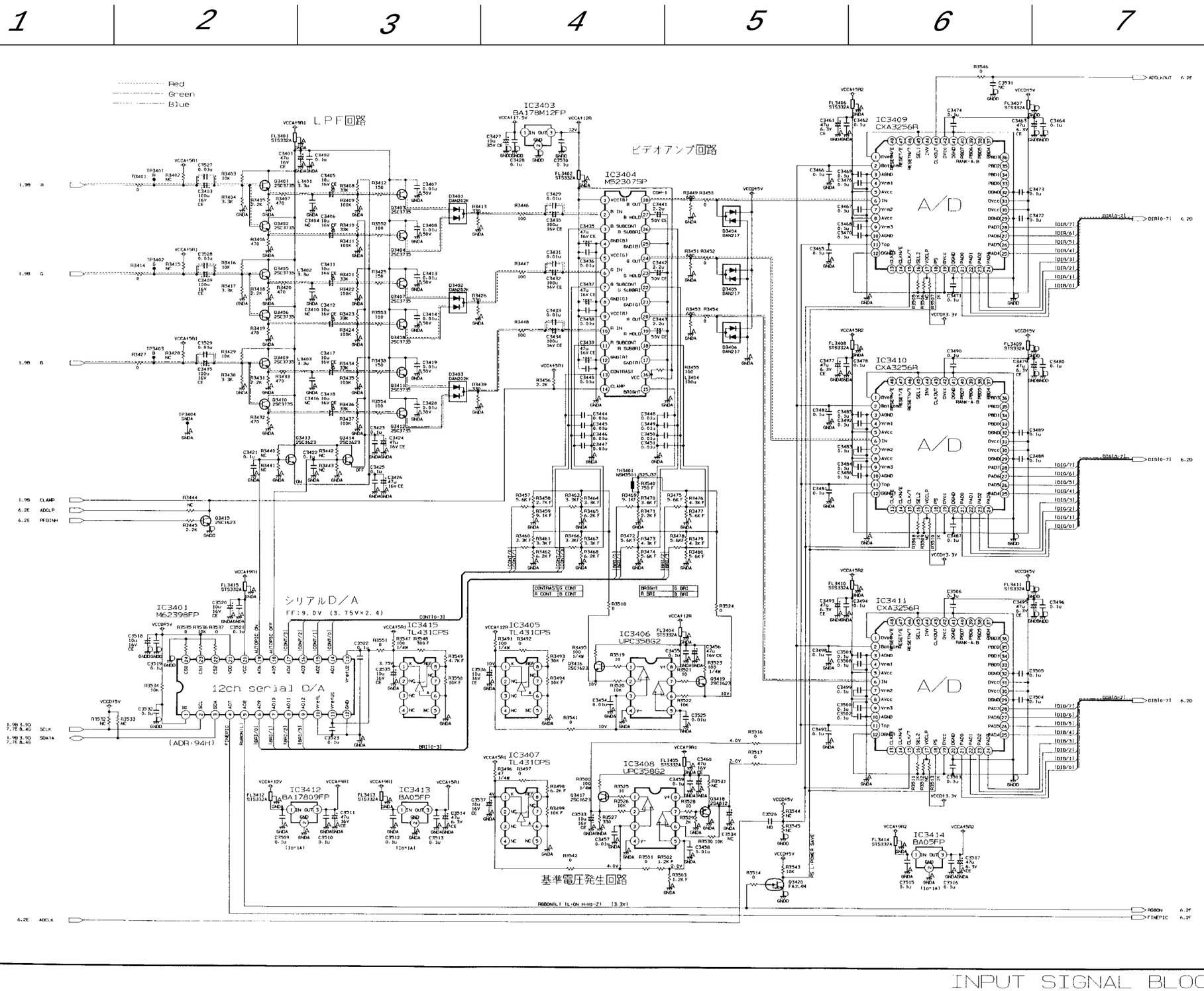
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

MAIN PWB (PWC-4369) (5/8)



INPUT SIGNAL BLOCK

NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS.
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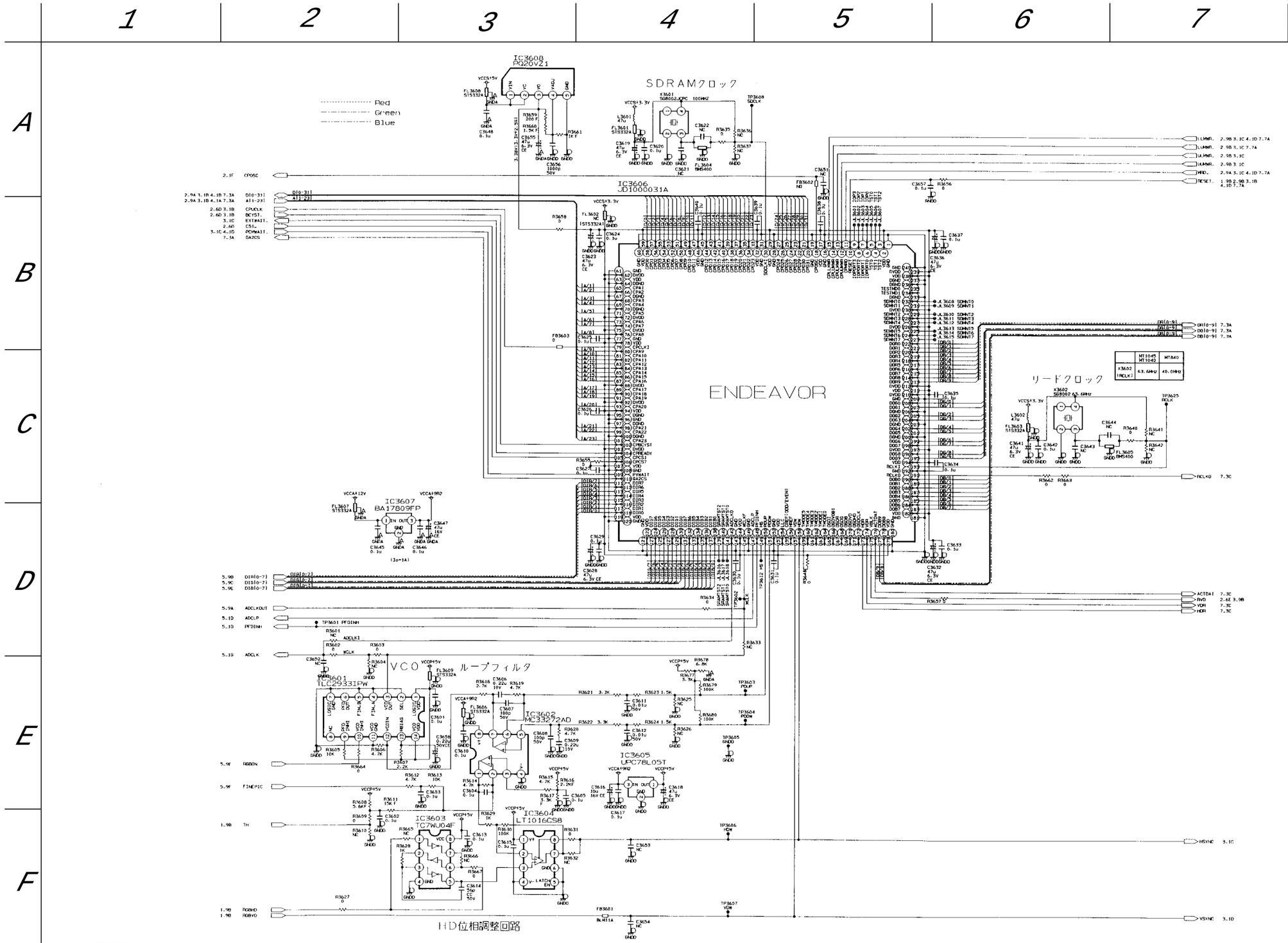
MAIN PWB (PWC-4369) (6/8)



NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS.
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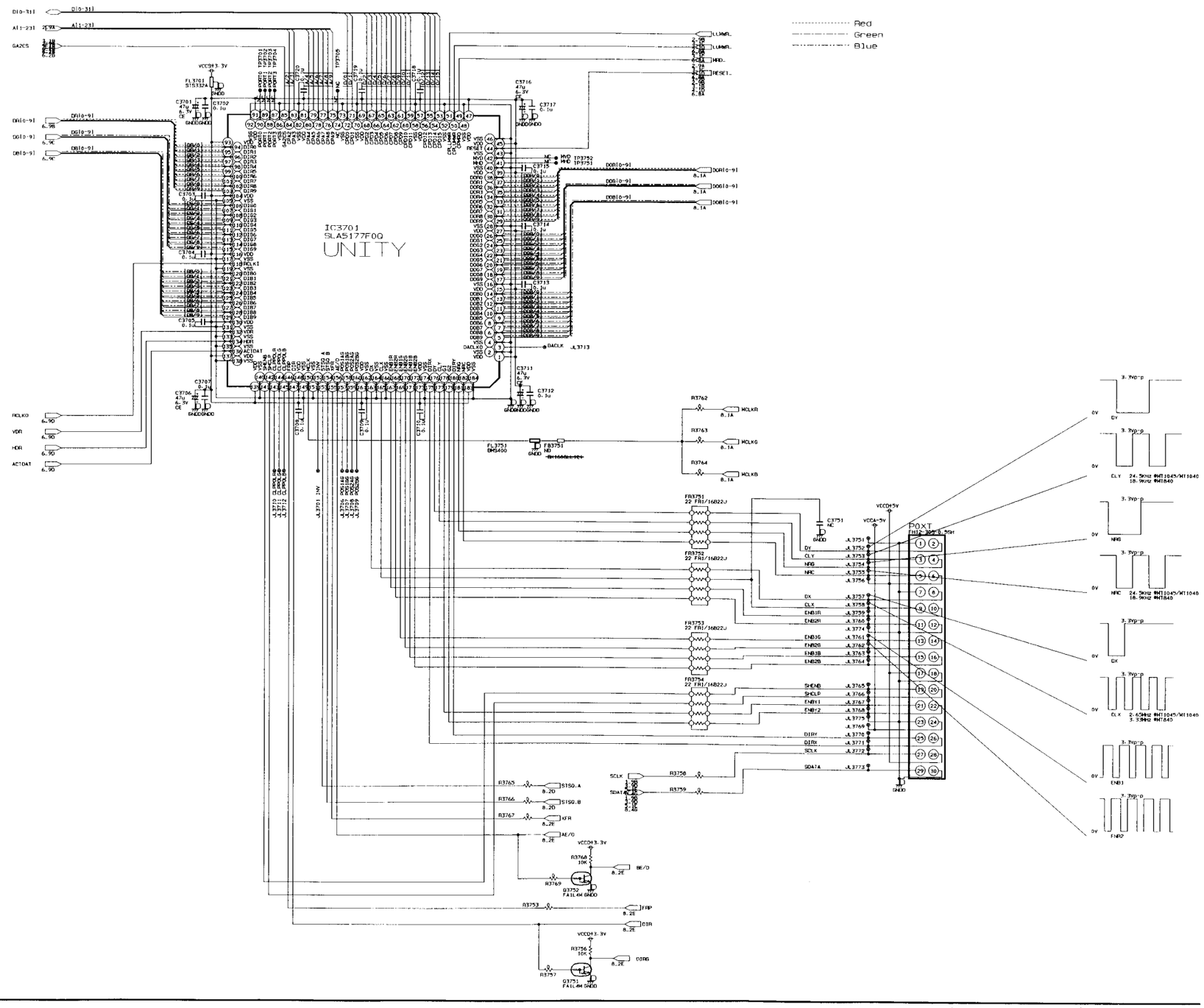
MAIN PWB (PWC-4369) (7/8)



NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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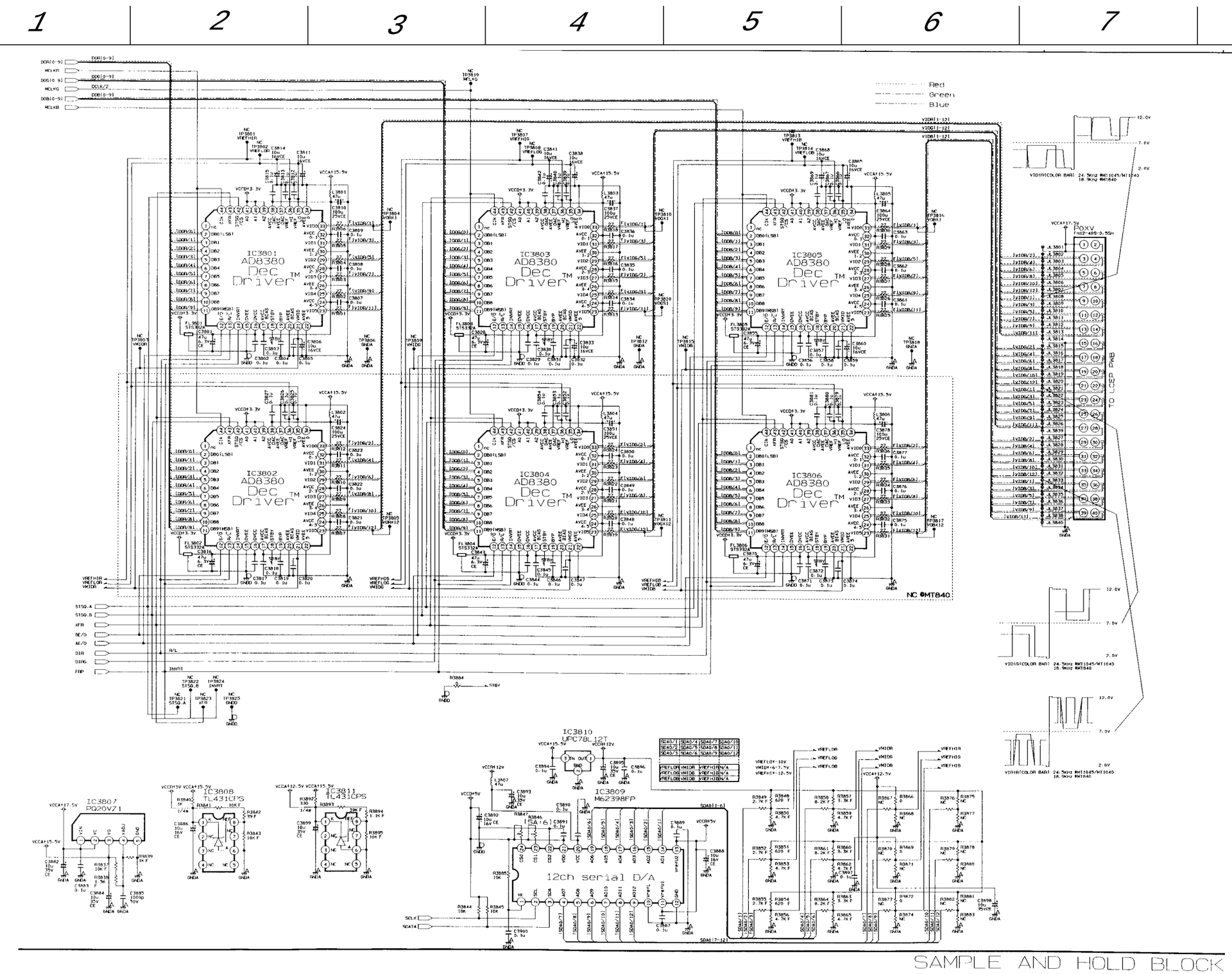
MAIN PWB (PWC-4369) (8/8)



NOTES
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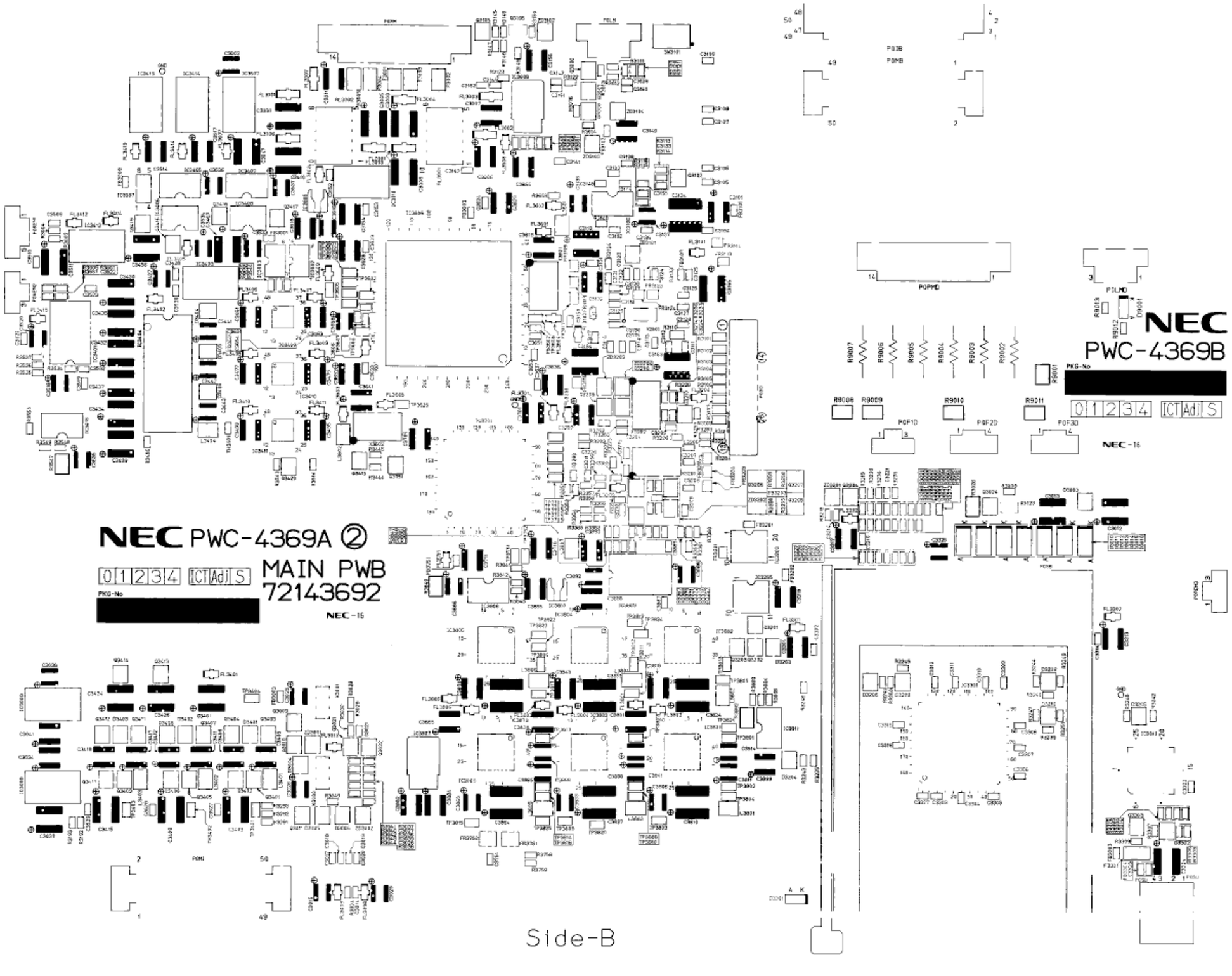
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

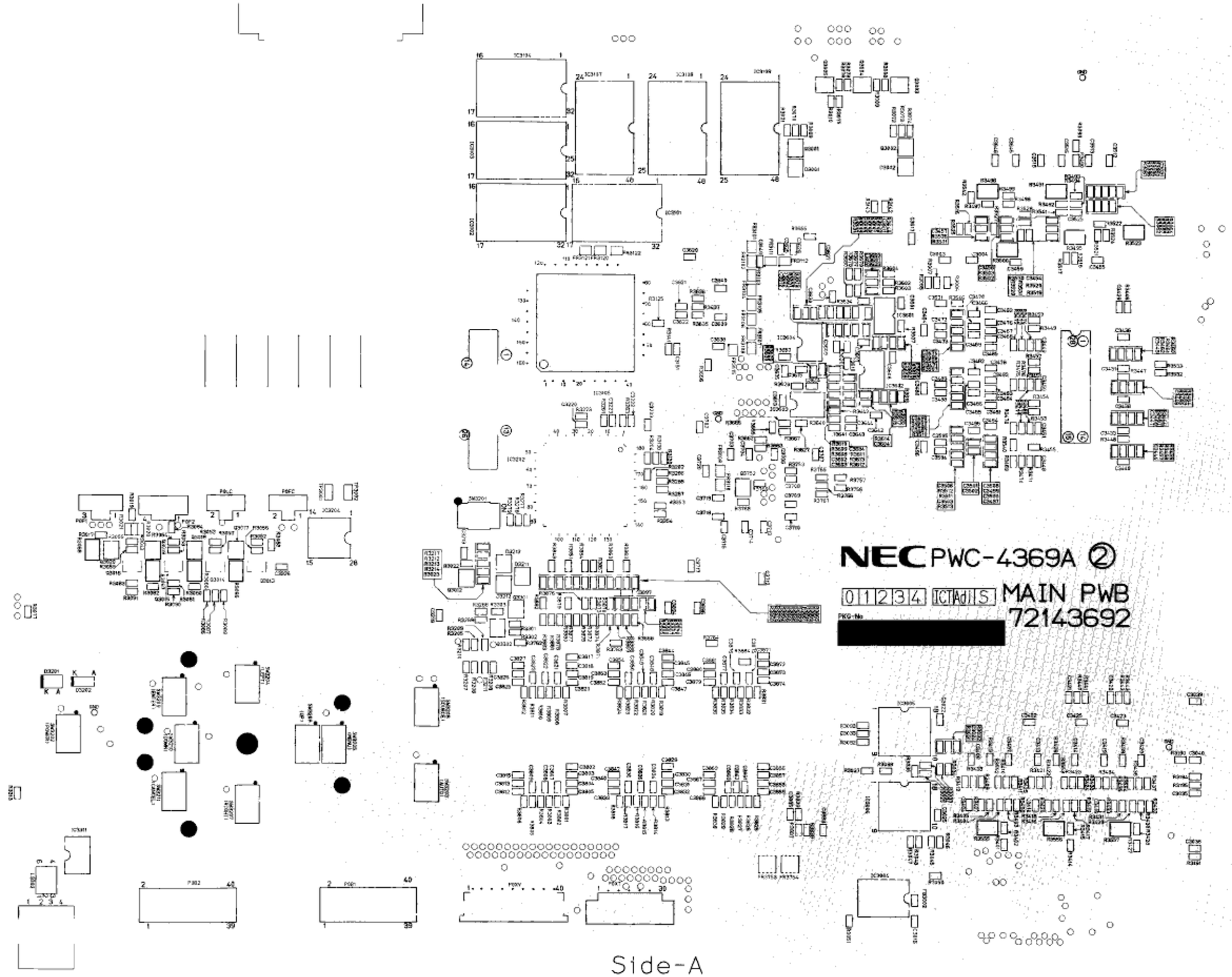
WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS.
REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT PARTS.
DONT DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

MAIN PWB (PWC-4369)

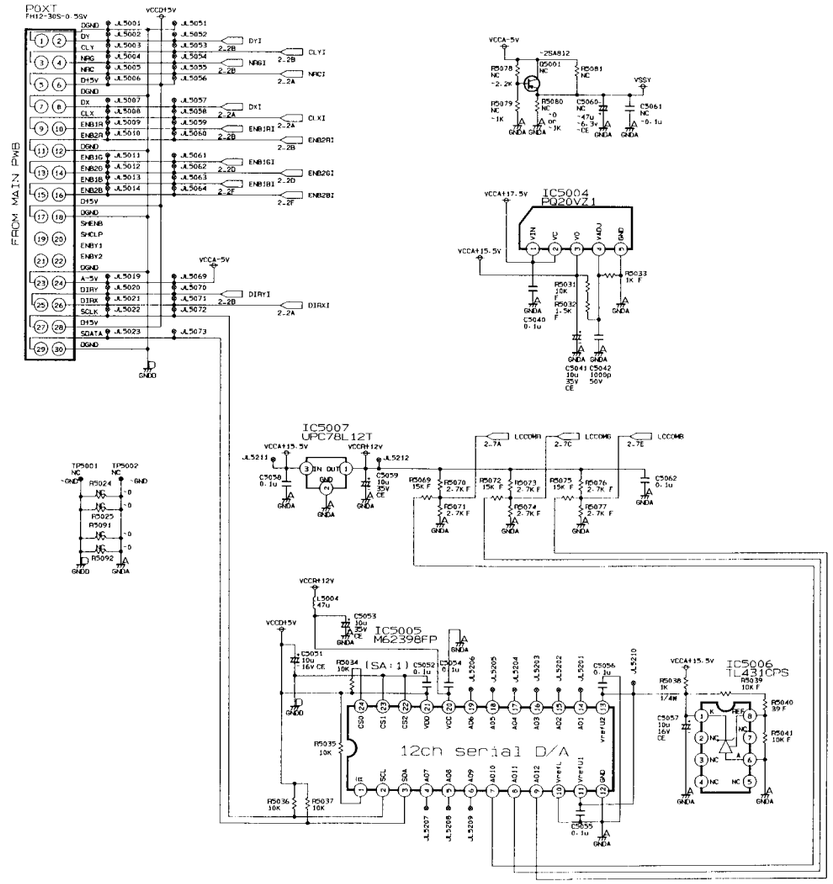
PARTS SIDE

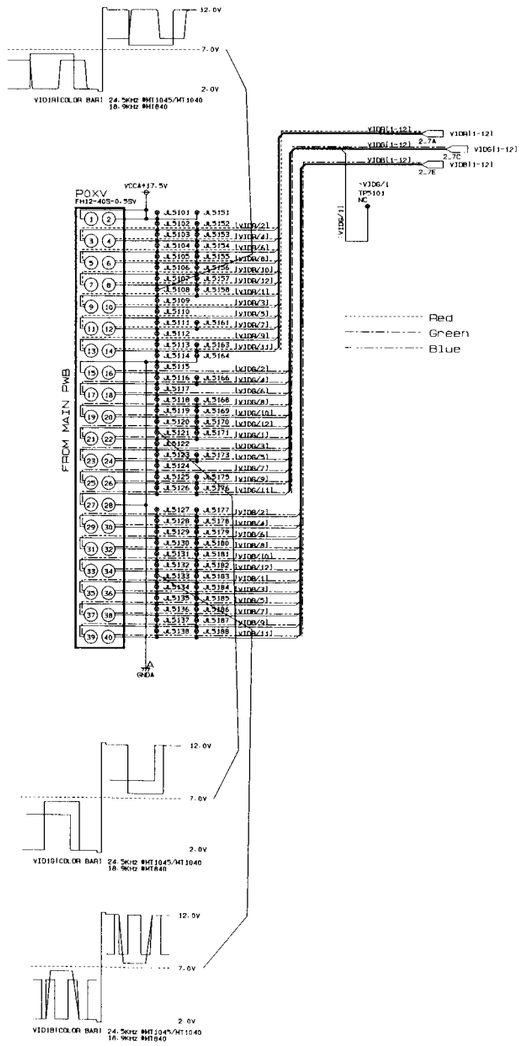


MAIN PWB (PWC-4369)
SOLDER SIDE



LCEP PWB (PWC-4370) (1/2)





NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
REPLACEMENT PARTS WHICH HAVE SPECIAL SAFTY CHARACTERISTICS ARE IDENTIFIED BY ⚠ SHADING ON THE SCHEMATICS.
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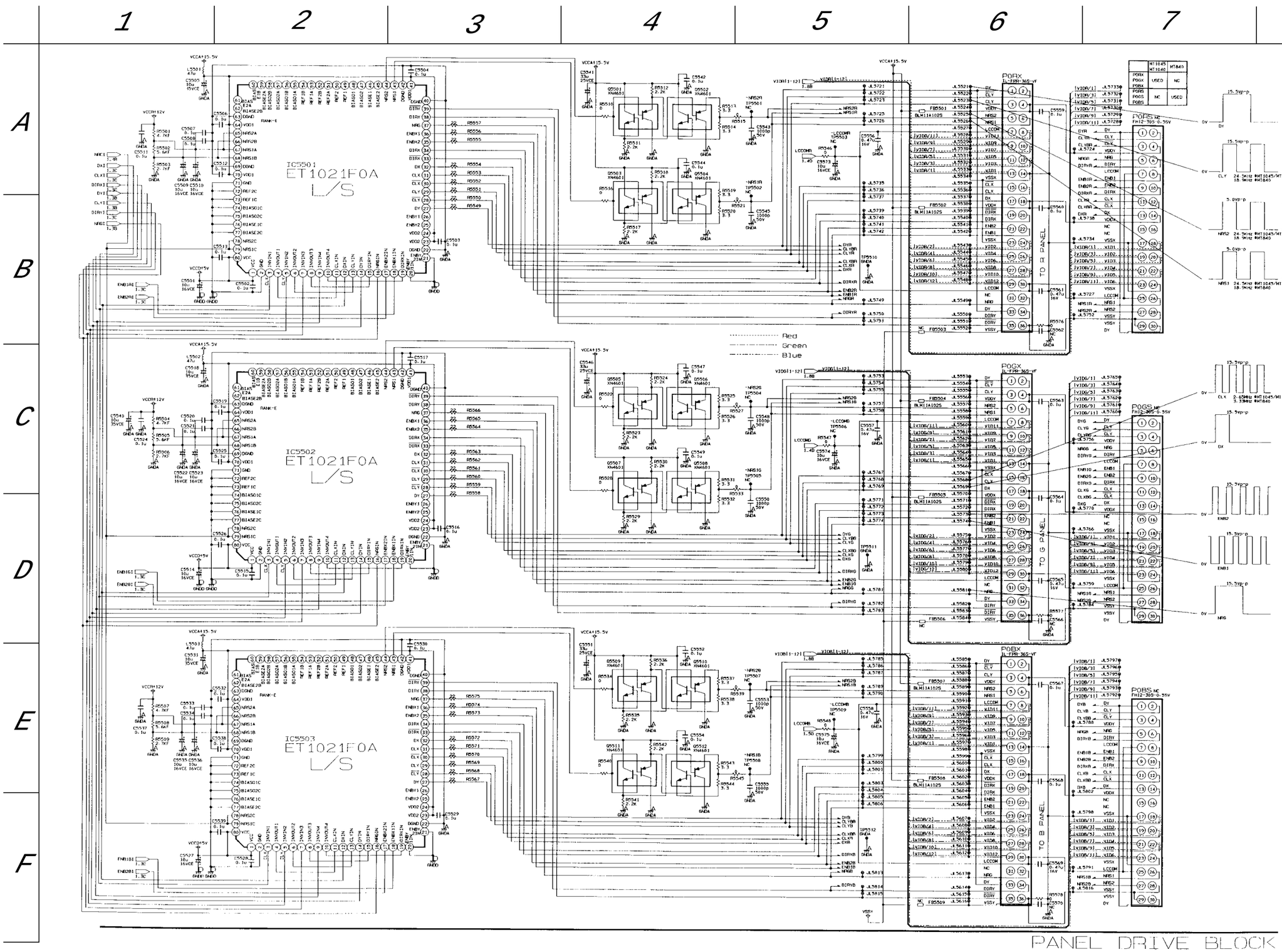
LCEP PWB (PWC-4370) (2/2)



NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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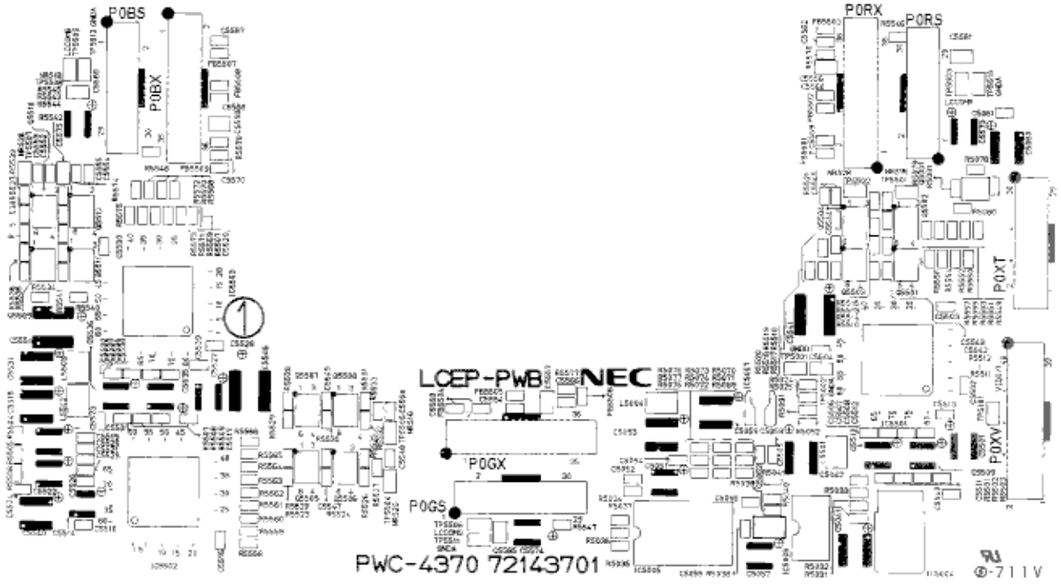
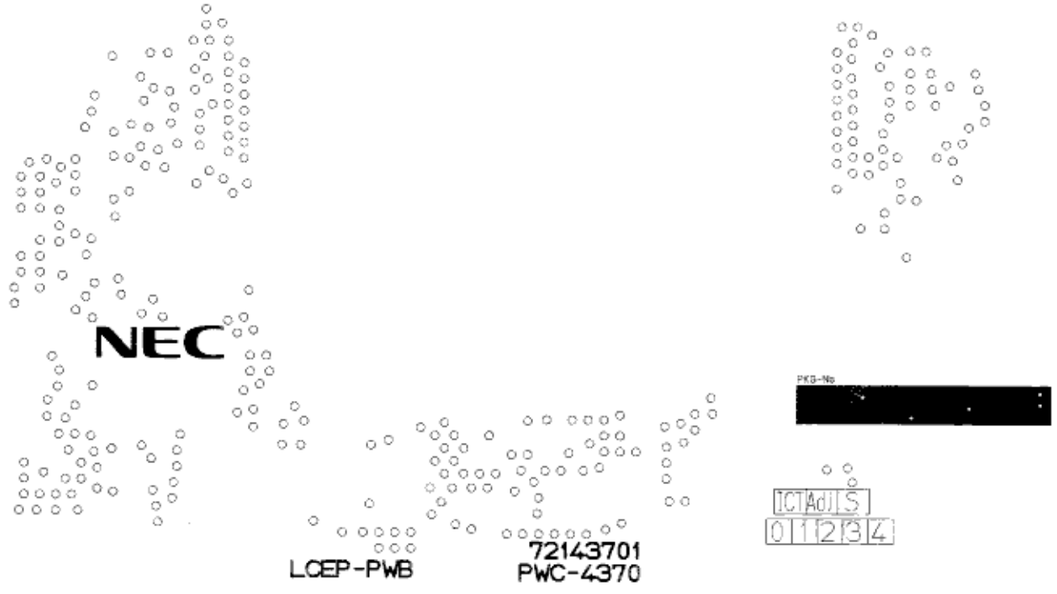
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

LCEP PWB (PWC-4370)

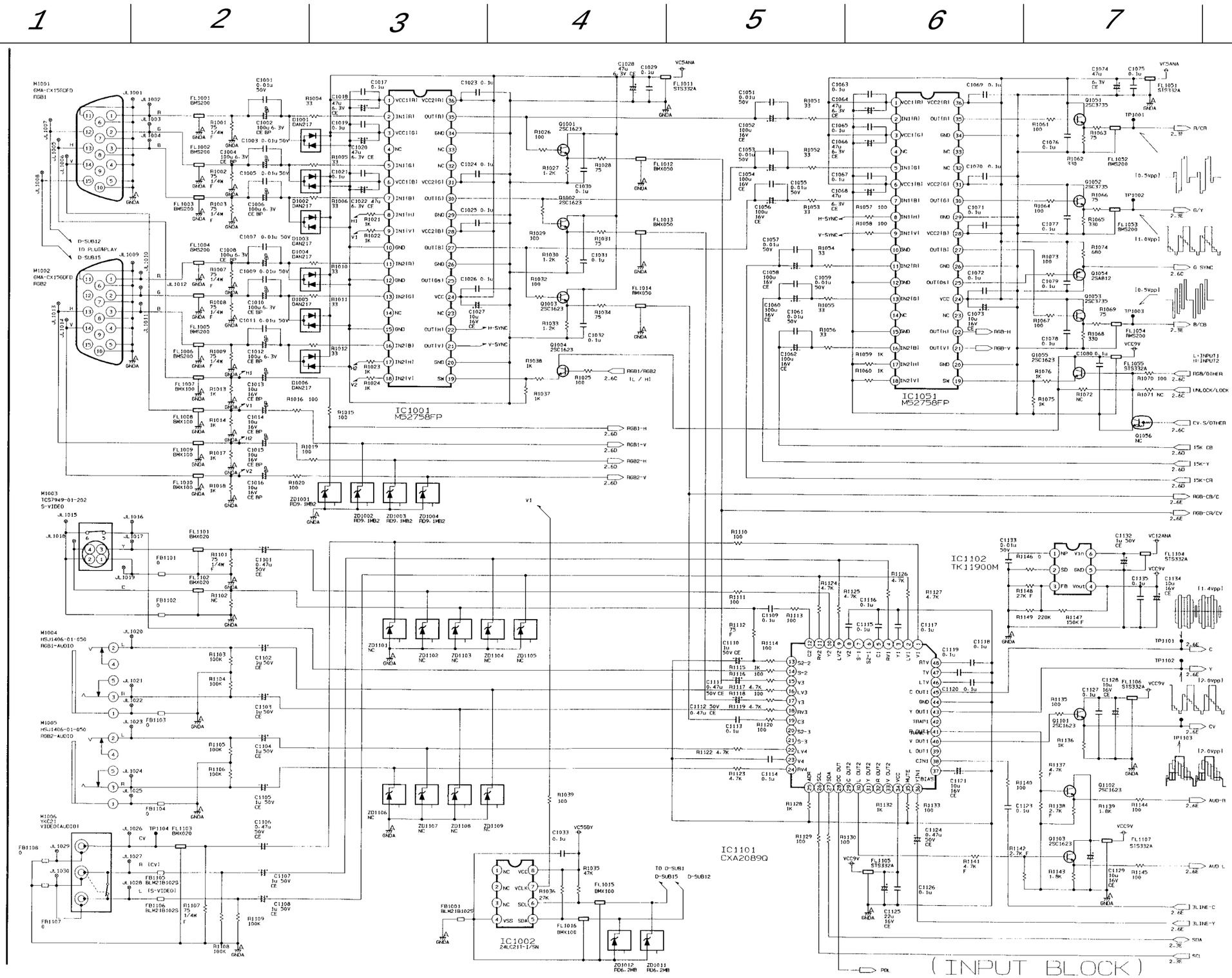
PARTS SIDE



SOLDER SIDE



I/O PWB (PWC-4368A) (1/2)



NOTES
1. RESISTOR VALUES ARE IN Ω (0HM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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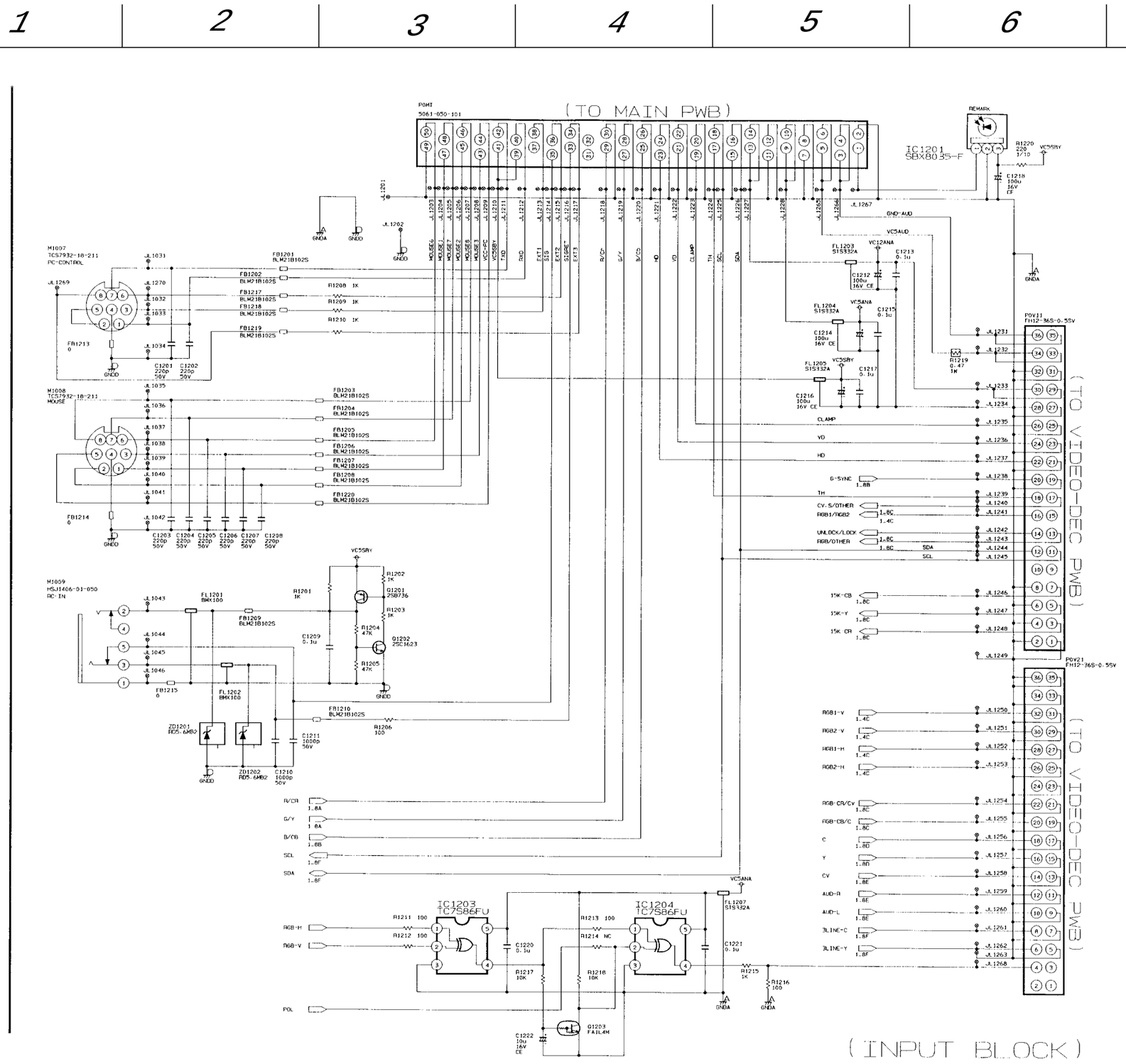
REPLACE THESE CRITICAL COMPONENTS WITH RECOMMENDED REPLACEMENT PARTS.
DONT DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

I/O PWB (PWC-4368A) (2/2)



NOTES
1. RESISTOR VALUES ARE IN Ω (OHM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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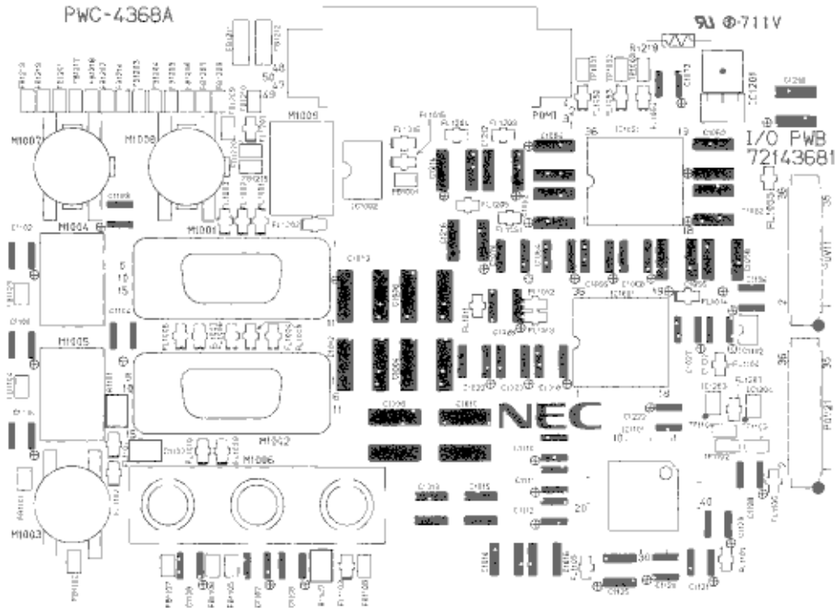
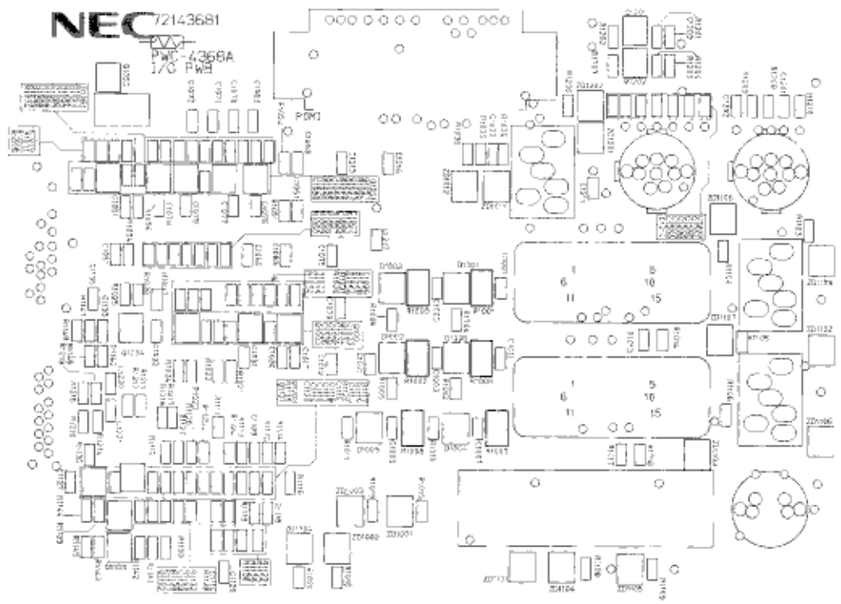
I/O PWB (PWC-4368A)

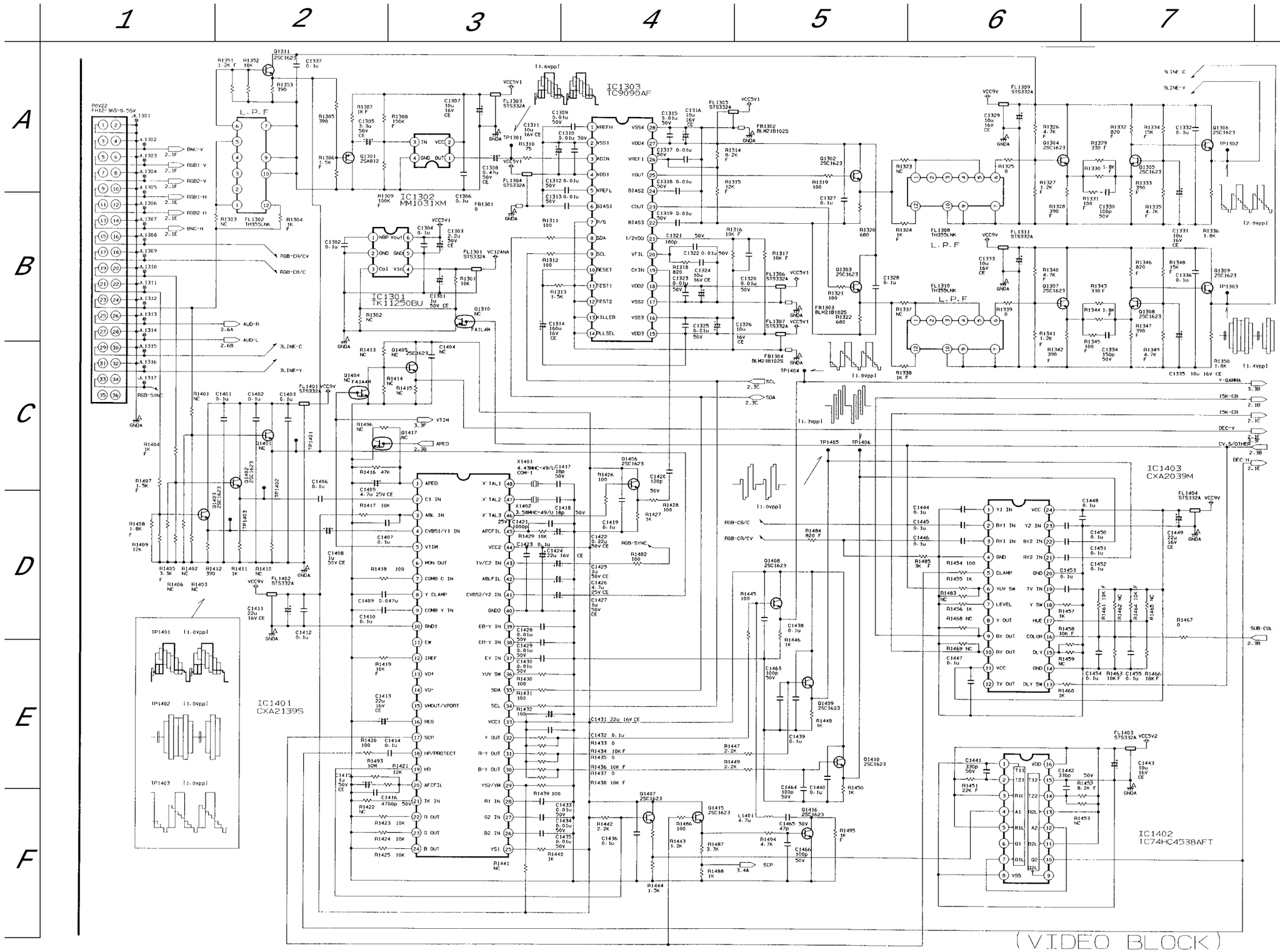
PART SIDE



SOLDER SIDE



VIDEO-DEC PWB (PWC-4368B) (1/3)



NOTES
1. RESISTOR VALUES ARE IN Ω (OHM) K=1.000Ω M=1.000.000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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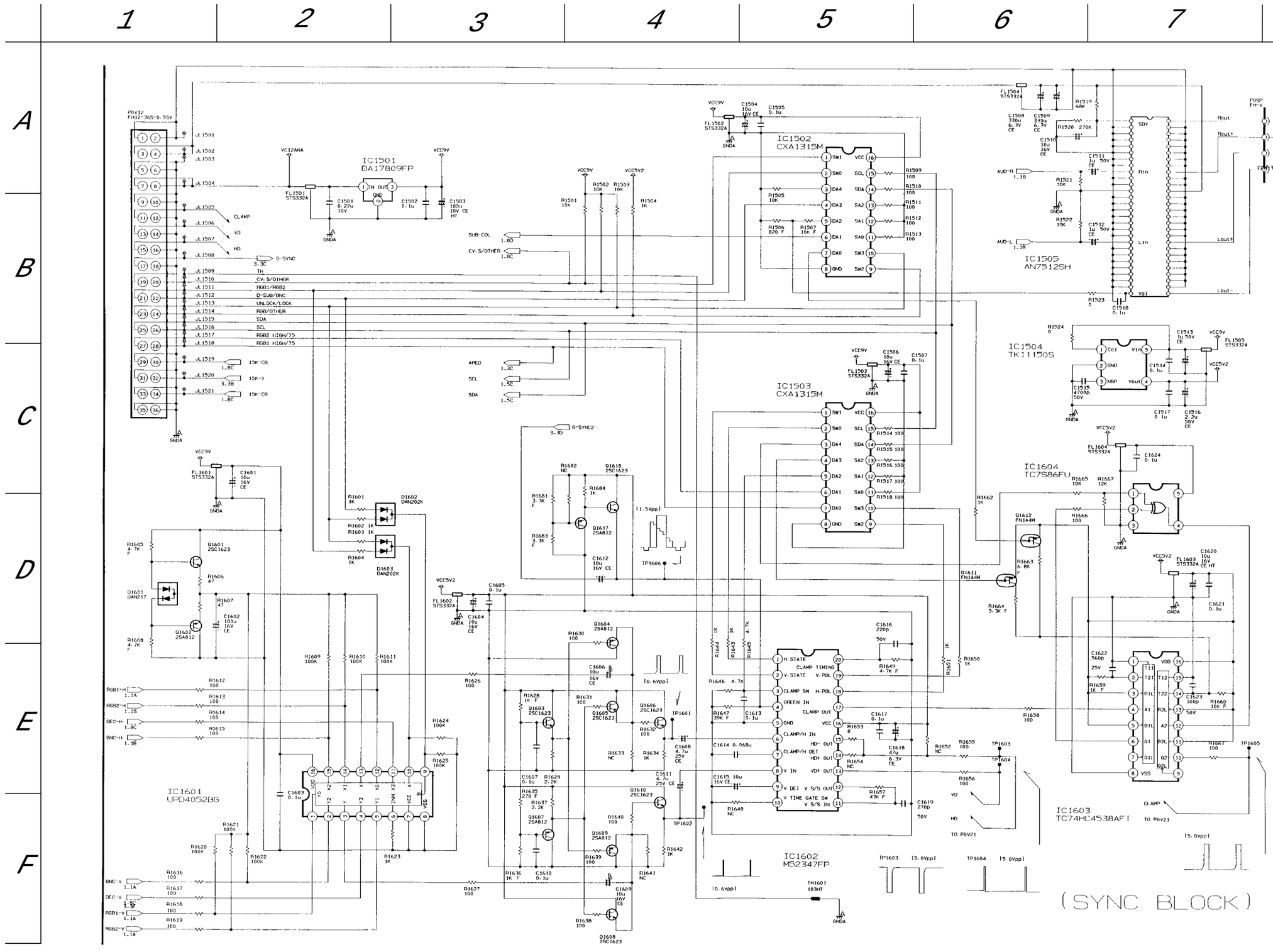
VIDEO-DEC PWB (PWC-4368B) (2/3)



NOTES
1. RESISTOR VALUES ARE IN Ω (OHM) K=1,000Ω M=1,000,000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=pF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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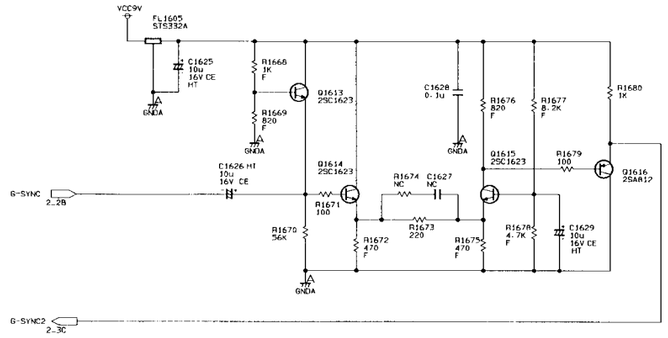
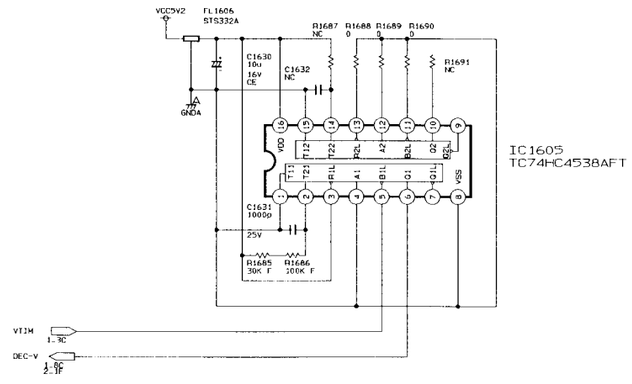
VIDEO-DEC PWB (PWC-4368B) (3/3)





NOTES
1. RESISTOR VALUES ARE IN Ω (OHM) K=1,000Ω M=1,000,000Ω
2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

WARNING
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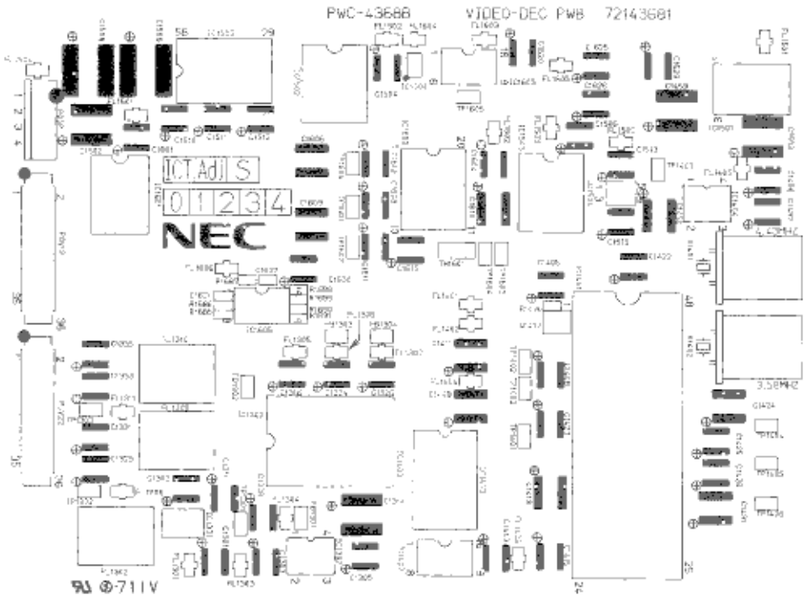
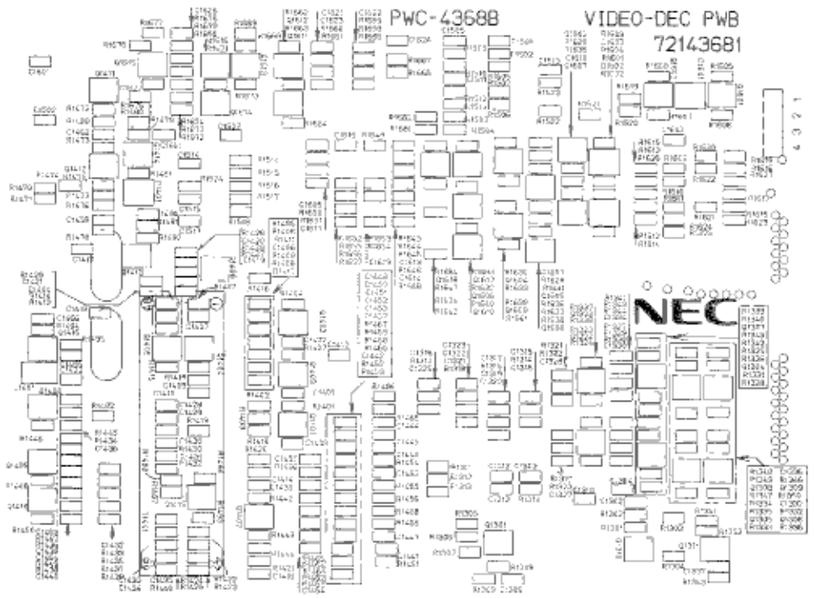
VIDEO-DEC PWB (PWC-4368B)

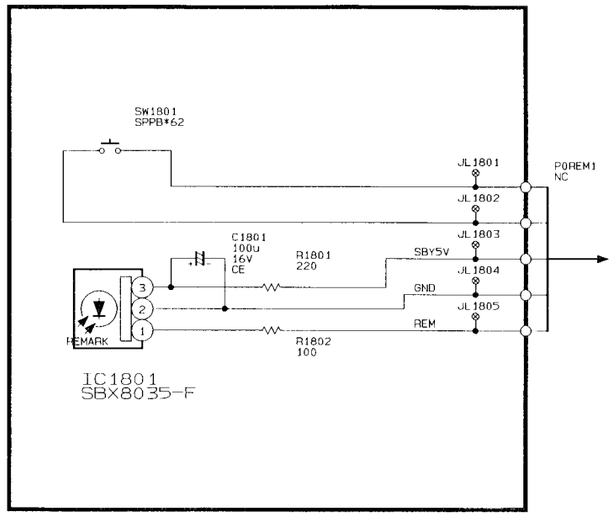
PARTS SIDE



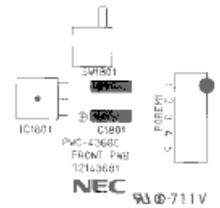
SOLDER SIDE



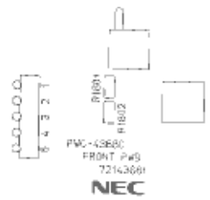
FRONT PWB (PWC-4368C)



FRONT PWB (PWC-4368C)
PARTS SIDE



SOLDER SIDE



NOTES
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4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

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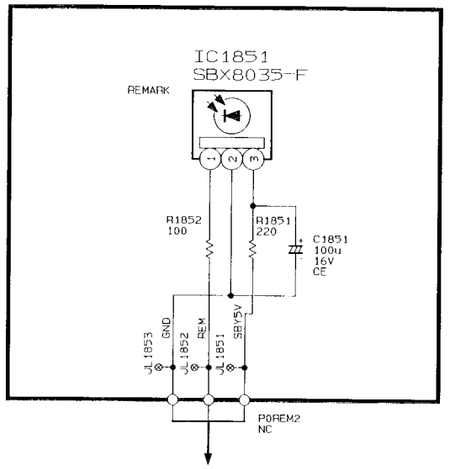
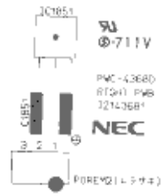
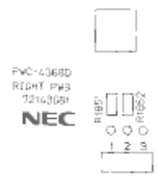
RIGHT PWB (PWC-4368D)



RIGHT PWB (PWC-4368D)
PARTS SIDE



SOLDER SIDE



NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

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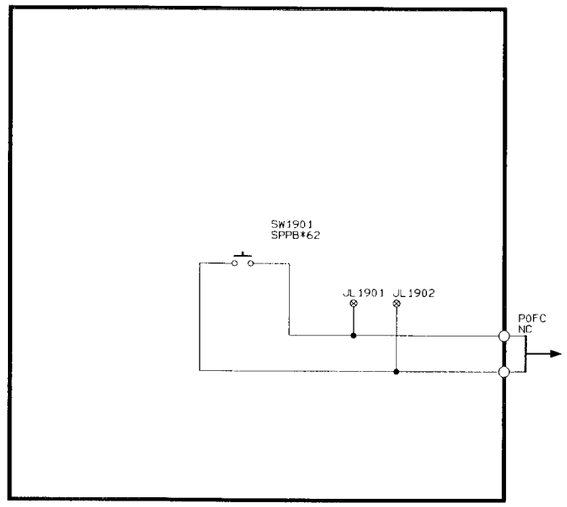
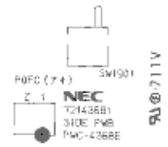
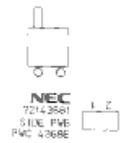
SIDE PWB (PWC-4368E)



SIDE PWB (PWC-4368E)
PARTS SIDE



SOLDER SIDE



NOTES
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5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

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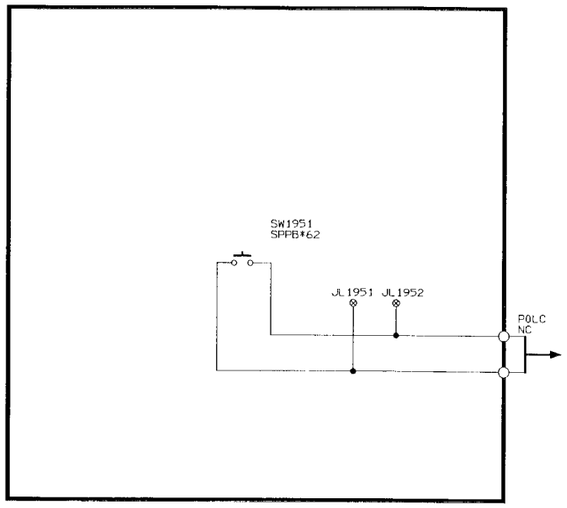
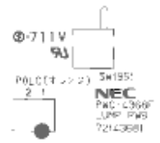
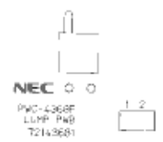
LUMP PWB (PWC-4368F)



LUMP PWB (PWC-4368F)
PARTS SIDE



SOLDER SIDE



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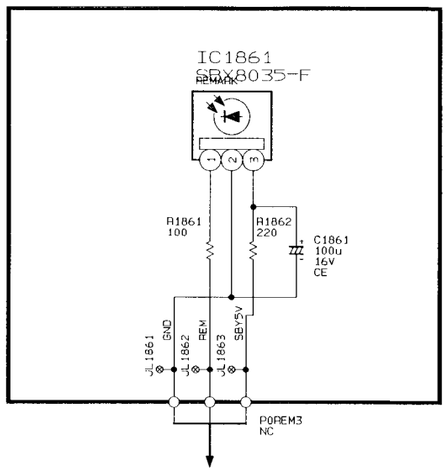
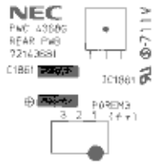
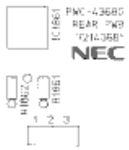
REAR PWB (PWC-4368G)



REAR PWB (PWC-4368G)
PARTS SIDE



SOLDER SIDE



NOTES
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3. CAPACITOR VALUES ARE IN µF UNLESS OTHERWISE INDICATED. P=PF
4. REFER TO THE PARTS LIST IN REGARD TO THE RATED VOLTAGE VALUES OF CAPACITORS.
5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

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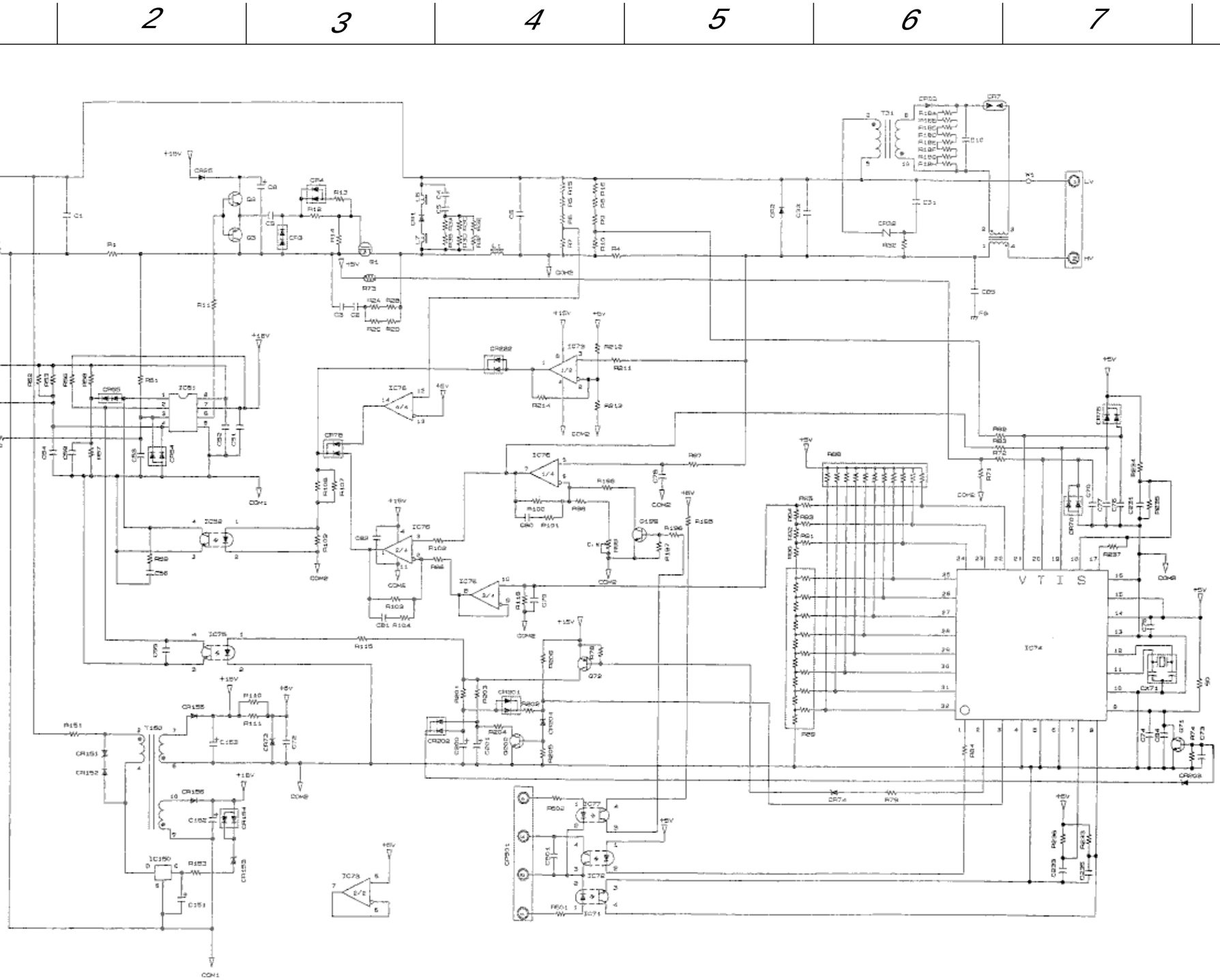
BALLAST PWB



NOTES
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2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN μF UNLESS OTHERWISE INDICATED. P=PF
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5. Ⓗ ..... HORIZONTAL RATE. Ⓥ ..... VERTICAL RATE.

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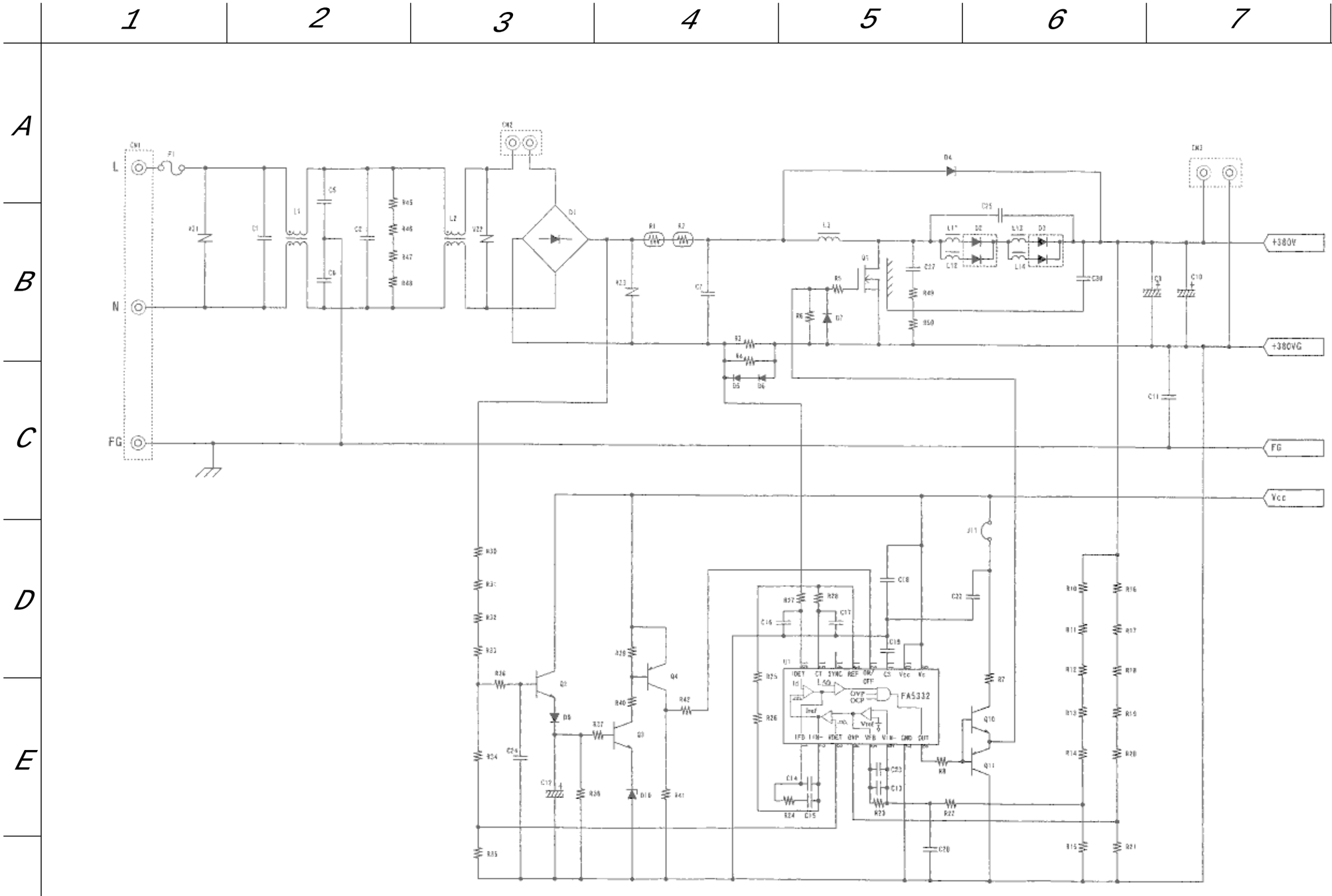
POWER UNIT



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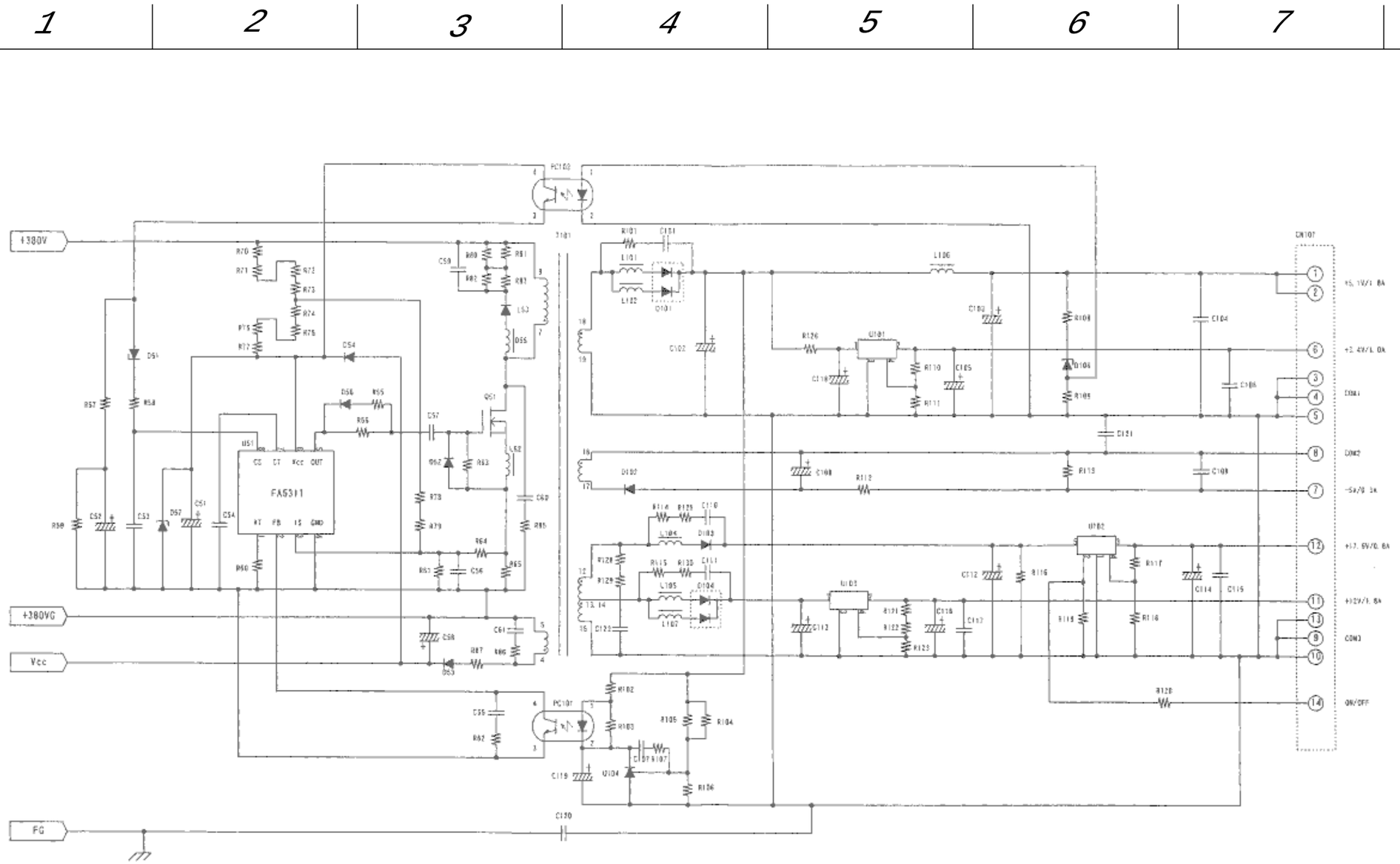
POWER UNIT



NOTES
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2. REFER TO THE PARTS LIST IN REGARD TO THE RATED POWER VALUES OF RESISTORS.
3. CAPACITOR VALUES ARE IN μF UNLESS OTHERWISE INDICATED. P=PF
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